CURRICULUM FOR

FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(Anatomy, Histology and Embryology)

HOMOEOPATHY EDUCATION BOARD

NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058

INDEX

Sl. No	Description	Page Number
1	Preamble	04
2	Program Outcomes (PO)	05
3	Course Outcomes (CO)	06
4	Teaching Hours	07
5	Course Content	09
6	Teaching Learning Methods	27
7	Content Mapping (Competencies Table)	29
8	Practical Topics **(Non-Lecture Activities)**	103
9	Assessment	104
10	List of Recommended Books	114
11	List of Contributors	116

FINAL VERSION OF COMPETANCY BASED CURRICULUM FOR ANATOMY FOR FIRST BHMS COURSE

Subject- Human Anatomy

Subject Code: Hom UG-AN

1. PREAMBLE

Anatomy is a study of the structural organization and development of man from gross to cellular aspects along with exploring the interrelationship of different tissues, organs and systems.

An important aspect for the homoeopathic student to grasp is the essentially holistic approach emphasized by Hahnemann. From that perspective, study of anatomy is not a study of isolated organs, parts or tissues but that of a hierarchical system which is intimately interconnected and functions with a purpose of striking balance when in a state of adaptation. The subtle ways in which this balance is lost through a malfunctioning of the vital force needs to be appreciated. This can occur when anatomy is taught with applied anatomy in the background.

While anatomy explores the structural organization of man, physiology gives us an understanding of the functional organization of the human being. These subjects, which are in reality the two sides of the coin, need to be taught interdependently. This enables the student to develop an insight into the essential interconnection of both in normal health and how both these alter when the disease process gets initiated in the system. This will also reduce the number of teaching hours due to avoiding duplication of information. While the clinical integration is taking place, homoeopathic connection is emphasized when the relevance of the Homoeopathic subjects being taught in the 1st year (Philosophy, Materia Medica, Pharmacy and Repertory), is simultaneously brought to the forefront and hence student-centered teaching of the first BHMS year be achieved.

Advances in the understanding of tissues and cell structures which subsume functions of the organs and systems can afford a fertile area for exploring the action of drugs of Materia medica.

2. PROGRAMME OUTCOMES

At the end of BHMS program, a student should;

1. Develop the competencies essential for primary health care in clinical diagnosis and treatment of diseases through the judicious application of homoeopathic principles.
2. Recognize the scope and limitation of homoeopathy and to apply the Homoeopathic Principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community.
3. Discern the relevance of other systems of medical practice for rational use of cross referral and life saving measures, so as to address clinical emergences.
4. Develop capacity for critical thinking and research aptitude as required for evidence based homoeopathic practice.
5. Demonstrate aptitude for lifelong learning and develop competencies as and when conditions of practice demand.
6. Be competent enough to practice homoeopathy as per the medical ethics and professionalism.
7. Develop the necessary communication skills to work as a team member in various healthcare setting and contribute towards the larger goals of national policies such as school health, community health, environmental conservation.
8. Identify and respect the socio-demographic, psychological, cultural, environmental & economic factors that affect health and disease and plan homoeopathic intervention to achieve the sustainable development Goal.

3. COURSE OUTCOMES

At the end of the I BHMS course, I BHMS student should be able to;

1. Discuss the evolution of life and the developmental anatomy and genetics of human.
2. Explain the ethics of Anatomy, such as Anatomy act, Body donation & receiving procedure and its legal aspects, develop respect to the human cadaver.
3. Differentiate the structural organization of man from micro to macro and its evolution from embryo.
4. Correlate the structural organization of man with functional organization and its applied aspect.
5. Apply anatomy knowledge to achieve vertical integration with clinical subjects.
6. Correlate structural organization of man with Homeopathic Philosophy and concept of man, Homoeopathic Materia Medica, Repertory and Pharmacy.
7. Correlate structural organization in interpreting different investigations.

4. TEACHING HOURS

Sl. No.	Subject	Theoretical Lecture	(Non – Lecture hours) Practical / Tutorials / Seminars / Clinical Postings
01	Anatomy	325 hrs.	330hrs.

Theory (hrs)	Non-lecture (hrs)	
325	Practical	Non-lecture activities
	250	80
Total – 655 hours		

a. TEACHING HOURS (THEORY)

Paper-I			
Sl. No	**List of Topics**	**Term**	**Teaching Hours**
1	General Anatomy	I	32
2	Head, Neck & Face	II	50
3	Central Nervous System	II	30
4	Upper Extremities	I	35
5	Embryology	I	20

Paper-II			
Sl. No	**List of Topics**	**Term**	**Teaching Hours**
1	Thorax	II	28
2	Abdomen & Pelvis	III	70
3	Lower Extremities	III	40

4	Histology	I	20

b. TEACHING HOURS (PRACTICAL)

Sl. No	List of Topics	Term	Teaching Hours
1	Head, Neck & Face	II	56
2	Central Nervous System	II	16
3	Upper Extremities	I	34
4	Thorax	II	30
5	Abdomen & Pelvis	III	50
6	Lower Extremities	III	40
7	Histology	I	24

5. COURSE CONTENT: Syllabus Planning

a. Theory:

a. Syllabus should start with revision of some of important topics of BIOLOGY (To connect Biology to Medical Science), origin of Earth and Environment, Origin of LIFE-Evolution of Human Lives.

b. The complete course of Human Anatomy should be subdivided in number of modules according to topics/regions/systems.

c. Syllabus of other subjects of same course should be planned out where the maximum integration (Vertical & Horizontal) of topics is possible.

d. Theory/Practical/Tutorial/Case based learning should be arranged in parallel.

e. Each module should be planned according to the need of system-Co-relation with Homoeopathy & time dimension (number of hours).

f. At the end of each module knowledge should be assessed by arranging joint seminars (application of classroom knowledge to practical understanding).

g. The curriculum includes the following;

1. Anatomy Act.
2. Body donation procedure and its legal aspects.
3. Develop respect to the human cadaver, empathy towards diseased and sense of gratification for the voluntary body donors and their families.
4. Anatomy and Ethics.

b. Practical

a. Dissection of whole Human Body, Demonstration of dissected parts and small group discussions.

b. Identification of histological slides, related to tissue & organs.

c. Students shall maintain Practical/Dissection & Histology record.

THEORY

Sl. No.	Topics	No. of hours	Term
1.	**GENERAL ANATOMY**		**I**
	1. Modern concepts of cell and its components; cell division, types with their significance	2	
	2. Basic tissues	2	
	3. Genetics i. DNA & RNA ii. Chromosomes	6	

Sl. No.	Topics	No. of hours	Term
	iii. Genes iv. Inheritances v. Genetic basis of diseases and Integration with homoeopathic concept of miasmatic influence		
	4. Basics of General Anatomy- i. Definition and subdivisions of Anatomy ii. History of Anatomy iii. Anatomical terms of position & movement iv. Skin, superficial and deep fasciae v. Muscles vi. Bones vii. Joints viii. Blood vessels ix. Lymphatic system x. Nerves xi. Glands: types and classification	 1 1 2 2 2 2 2 2 2 2 2 2	
	5. Revision	2	
	Total Hours	**32**	
2.	**DEVELOPMENTAL ANATOMY (EMBRYOLOGY)**		**I**
	1. Introduction 2. Spermatogenesis 3. Oogenesis 4. Fertilization 5. Cleavage and implantation 6. Bilaminar germ disc formation 7. Gastrulation: Germ layers & Derivatives 8. Intraembryonic mesoderm derivatives: Somites 9. Ossification 10. Notochord 11. Folding of the embryonic: formation of primitive gut 12. Placenta 13. Revision	1 1 1 1 2 2 3 1 1 1 1 2 1 2	
	Total Hours	**20**	
3.	**HISTOLOGY (General)**		**I**

Sl. No.	Topics	No. of hours	Term
	1. Introduction	1	
	2. Epithelial tissue	2	
	3. Connective tissue	2	
	4. Cartilage	1	
	5. Bone	1	
	6. Muscle	2	
	7. Nervous tissue	1	
	8. Skin	2	
	9. Lymphoid organs	2	
	10. Blood vessels	2	
	11. Glands	2	
	12. Revision	2	
	Total Hours	**20**	
4.	**UPPER EXTREMITY**		**I**
	1. Introduction	1	
	2. Pectoral region and axilla	2	
	3. Mammary Gland	2	
	4. Brachial plexus	2	
	5. Axillary artery	1	
	6. Back and Intermuscular spacesaround scapula	2	
	7. Shoulder Joint	2	
	8. Musculocutaneous and axillary nerves	1	
	9. Arm and cubital fossa; brachial artery	2	
	10. Fore arm: Muscles, nerves and blood vessels (Superficial and Deep Flexors and Extensors)	4	
	11. Radial artery	1	
	12. Ulnar artery	1	

Sl. No.	Topics	No. of hours	Term
	13. Median nerve	2	
	14. Ulnar nerve	1	
	15. Radial nerve	2	
	16. Elbow joint and radio-ulnar articulations	2	
	17. Wrist joint	1	
	18. Flexor and extensor retinacula	1	
	19. Palmar aponeurosis and spaces in palmar spaces	2	
	20. Venous drainage of upper extremity	1	
	21. Revision	2	
	Total Hours	**35**	
5.	**LOWER EXTREMITY**		**III**
	1. Introduction	1	
	2. Lumbar plexus and femoral nerve	2	
	3. Front of thigh	2	
	4. Femoral Triangle and Femoral artery	2	
	5. Median compartment of thigh and obturator nerve	2	
	6. Gluteal region	2	
	7. Sacral plexus and sciatic nerve, tibial and common peroneal nerves	4	
	8. Back of the thigh Popliteal fossa	2	
	9. Hip joint	2	
	10. Front of the leg and dorsum of the foot: Anterior tibial artery, deep peroneal nerve	4	
	11. Back of the leg: Tibial nerve and posterior tibial artery	3	
	12. Side of the leg: Superficial peroneal nerve	2	

Sl. No.	Topics	No. of hours	Term
	13. Retinacula around the ankle	1	
	14. Sole of foot	2	
	15. Knee Joint	2	
	16. Ankle joint	1	
	17. Arches of foot	2	
	18. Venous drainage of lower extremity	2	
	19. Revision	2	
	Total Hours	**40**	
6.	**THORAX**		**II**
	1. Introduction	1	
	2. Trachea	1	
	3. Pleura	1	
	4. Lungs	3	
	5. Mediastinum	2	
	6. Pericardium and Heart	4	
	7. Blood supply of heart	2	
	8. Superior mediastinum: Arch of aorta	1	
	9. Superior mediastinum: Superior Vena cava	1	
	10. Inferior Vena Cava	1	
	11. Posterior mediastinum: Azygous vein & Thoracic duct	2	
	12. Posterior mediastinum: Oesophagus & Descending thoracic aorta	2	
	13. Diaphragm	1	
	14. Systemic embryology: Development of Heart and lung	3	
	15. Systemic histology: Trachea and Lung	1	

Sl. No.	Topics	No. of hours	Term
	16. Revision	2	
	Total Hours	**28**	
7.	**ABDOMEN, PELVIS & PERINEUM**		**III**
	1. Introduction	1	
	2. Anterior Abdominal wall	2	
	3. Peritoneum	2	
	4. Stomach	2	
	5. Liver	2	
	6. Gall bladder and Extrahepatic biliary apparatus	2	
	7. Spleen	1	
	8. Duodenum	1	
	9. Pancreas	2	
	10. Jejunum and Ileum, Superior mesenteric artery	2	
	11. Caecum & appendix	2	
	12. Large intestine	2	
	13. Portal venous system	2	
	14. Kidney	2	
	15. Supra renal glands	1	
	16. Abdominal aorta	1	
	17. Posterior abdominal wall	1	
	18. Urinary bladder	2	
	19. Ureter	1	
	20. Prostate gland	2	
	21. Ovary	1	
	22. Uterus	2	
	23. Fallopian tube	1	

Sl. No.	Topics	No. of hours	Term
	24. Scrotum and testis	2	
	25. Vas deferens	1	
	26. Rectum	1	
	27. Anal canal	1	
	28. Walls of pelvis including pelvic diaphragm	2	
	29. Perineum: superficial and deep perineal pouches	3	
	30. Ischiorectal fossa	1	
	31. Systemic embryology: Development of digestive system	4	
	32. Systemic embryology: Development of urogenital organs	2	
	33. Systemic histology: Digestive system	4	
	34. Systemic histology: Urinary system & supra renal gland	2	
	35. Systemic histology: Male reproductive system	2	
	36. Systemic histology: Female reproductive system	2	
	37. Revision	6	
	Total Hours	**70**	
8.	**HEAD, NECK & FACE**		**II**
	1. Introduction	1	
	2. Scalp	2	
	3. Face: muscles, nerves and blood vessels	2	
	4. Lachrymal apparatus	1	
	5. Side of the neck: Posterior triangle	1	
	6. Front of the neck: Anterior triangle and its subdivisions	3	

Sl. No.	Topics	No. of hours	Term
	7. Deep cervical fascia	1	
	8. Back of the neck: Suboccipital triangle	1	
	9. Contents of vertebral canal	1	
	10. Parotid gland	1	
	11. Submandibular gland	1	
	12. Muscles of mastication	1	
	13. Temporomandibular joint	1	
	14. Thyroid gland	2	
	15. Cranial cavity: Dura mater, Dural venous sinuses & Pituitary gland	3	
	16. Contents of the orbit	1	
	17. Extraocular muscles	1	
	18. Oral cavity	1	
	19. Soft palate and palatine tonsil	1	
	20. Tongue	1	
	21. Pharynx	2	
	22. Larynx	2	
	23. Nose and paranasal air sinuses	2	
	24. Ear: EAC & middle ear, inner ear	2	
	25. Eustachian tube	1	
	26. Eyeball	2	
	27. Common & Internal carotidartery	1	
	28. External carotid artery	2	
	29. Vertebral artery	1	
	30. Internal Jugular vein	1	
	31. Systemic histology: Thyroid gland, Pituitary gland and Tongue	3	

Sl. No.	Topics	No. of hours	Term
	32. Systemic embryology: Pharyngeal arches: derivatives	1	
	33. Revision	3	
	Total Hours	**50 hrs**	
9.	**CENTRAL NERVOUS SYSTEM: BRAIN**		**II**
	1. Introduction	1	
	2. Meninges & CSF	1	
	3. Spinal cord	1	
	4. Medulla oblongata	1	
	5. Pons	1	
	6. Cerebellum	1	
	7. Fourth ventricle	1	
	8. Mid-brain	1	
	9. Diencephalon: Thalamus & Hypothalamus	2	
	10. Third Ventricle	1	
	11. Lateral Ventricle	1	
	12. Cerebrum: external features	2	
	13. Functional areas of cerebral cortex	1	
	14. Basal ganglia	1	
	15. White matter of cerebrum: Corpus callosum & Internal capsule	2	
	16. Blood supply of brain	2	
	17. Cranial nerves	6	
	18. Systemic embryology: Development of Brain	2	
	19. Revision	2	
	Total Hours	**30**	

Total – 325 hrs

PRACTICAL

Sl. No.	Topics	No. of hours	Term
1.	**GENERAL HISTOLOGY**		**I**
	1. Epithelial tissue: Simple & Stratified	4	
	2. Connective tissue: Loose/Areolar & Adipose	2	
	3. Connective tissue: Cartilages	2	
	4. Connective tissue: Compact bone (L.S, T.S) and Spongy bone	2	
	5. Muscle tissue: Skeletal (L.S, T.S), Smooth and Cardiac	2	
	6. Nervous tissue: Peripheral nerve (T.S) & Nerve fibre (L.S)	2	
	7. Skin: Thick & Thin	2	
	8. Lymphoid organs: Lymph node, Spleen, Thymus & Tonsil	4	
	9. Blood vessels: Large artery, Medium sized artery & Large vein	2	
	10. Glands: Serous, Mucous & Mixed	2	
	Total Hours	24	
2.	**UPPER EXTREMITY**		**I**
	1. Introduction	2	
	Osteology		
	2. Clavicle	2	
	3. Scapula	2	
	4. Humerus	2	
	5. Radius	2	
	6. Ulna	2	
	7. Articulated hand	2	

Sl. No.	Topics	No. of hours	Term
	8. Surface Markings in upper extremity	2	
	Dissection		
	9. Pectoral region	2	
	10. Axilla	2	
	11. Back & Shoulder	2	
	12. Arm: Front & Cubital fossa and Back of the arm	2	
	13. Front of Forearm & palm of hand	4	
	14. Back of Forearm & Dorsum of Hand	2	
	15. Joints of upper extremity	2	
	16. Radiology of upper extremity	2	
	Total Hours	**34**	
3.	**HEAD, NECK & FACE**	**II**	
	1. Introduction	2	
	Osteology		
	2. Skull	6	
	3. Mandible	2	
	4. Hyoid bone	2	
	5. Cervical vertebrae: Typical & Atypical	2	
	6. Surface Markings in head, neck & face.	2	
	Dissection		
	7. Scalp	2	
	8. Face	2	
	9. Posterior triangle of neck	2	
	10. Anterior triangle of neck	2	
	11. Back of neck	2	
	12. Cranial cavity & Contents of vertebral canal	4	

Sl. No.	Topics	No. of hours	Term
	13. Deep dissection of neck	2	
	14. Orbit & Eyeball	2	
	15. Ear	2	
	16. Parotid region	2	
	17. Temporal & infratemporal region	2	
	18. Sub mandibular region	2	
	19. Mouth, Tongue & Pharynx	2	
	20. Nose & Larynx	2	
	21. Temporo-Mandibular joint & joints of Neck	2	
	22. Radiological anatomy of Head, Neck and Face	2	
	Systemic Histology-		
	23. Thyroid gland (including parathyroid)	2	
	24. Pituitary gland	2	
	25. Revision	2	
	Total Hours	**56**	
4.	**CENTRAL NERVOUS SYSTEM**		**II**
	1. Introduction	2	
	Demonstration		
	2. Parts of the brain	4	
	3. Spinal cord	2	
	4. Ventricles (model)	2	
	5. Radiology of brain	2	
	Systemic Histology		
	6. Nervous tissue: Cerebrum & Cerebellum	2	
	7. Revision	2	

Sl. No.	Topics	No. of hours	Term
	Total Hours	**16**	
5.	**THORAX**		**II**
	1. Introduction	2	
	Osteology		
	2. Sternum. Ribs: Typical & Atypical	2	
	3. Thoracic vertebrae: Typical & Atypical	2	
	Surface Marking	4	
	Dissection		
	4. Anterior Thoracic wall, Intercostal space & contents	2	
	5. Pleura & Lungs	4	
	6. Contents of superior mediastinum & Pericardium	2	
	7. Heart: External features	2	
	8. Interior of Heart with valves of heart	2	
	9. Contents of posterior Mediastinum	2	
	10. Radiological anatomy	2	
	Systemic Histology		
	11. Trachea & Lung	2	
	12. Revision	2	
	Total Hours	**30**	
6.	**LOWER LIMB**		**III**
	1. Introduction	2	
	Osteology		
	2. Hip Bone	2	
	3. Femur & Patella	2	
	4. Tibia	2	

Sl. No.	Topics	No. of hours	Term
	5. Fibula	2	
	6. Articulated Foot	2	
	7. Surface Marking	2	
	Dissection		
	8. Front of thigh	4	
	9. Medial side of thigh	2	
	10. Gluteal region	2	
	11. Back of thigh & Popliteal fossa	2	
	12. Front of Leg & Dorsum of Foot	2	
	13. Leg: Medial, Lateral & Back of Leg	4	
	14. Sole of Foot	4	
	15. Joints of the lower extremity	2	
	16. Radiology lower extremity	2	
	17. Revision	2	
	Total Hours	**40**	
7.	**ABDOMEN & PELVIS**		**III**
	1. Introduction	2	
	2. **Osteology**		
	3. Lumbar Vertebrae	2	
	4. Sacrum and joints	2	
	5. Articulated Pelvis: Male & female	2	
	6. **Surface Marking**	4	
	Dissection		
	7. Anterior abdominal wall	2	
	8. External genitalia of Male	2	
	9. Abdominal cavity: Positions & Relations of viscera, Peritoneum, Greater & Lesser sac	2	

Sl. No.	Topics	No. of hours	Term
	10. Stomach & Spleen	2	
	11. Small intestine (Jejunum & Ileum) & Large intestine	2	
	12. Duodenum & Pancreas	2	
	13. Liver, Gall bladder & blood vessels of Digestive system	2	
	14. Kidney & Suprarenal gland	2	
	15. Posterior Abdominal wall & Diaphragm	2	
	16. Walls of the pelvis & Pelvic cavity : position & relations of viscera, Perineum	2	
	17. Urinary bladder, Urethra & Prostate	2	
	18. Ovary, Uterus, Fallopian tubes, Vagina	2	
	19. Sigmoid colon, Rectum & Anal canal	2	
	20. **Radiological anatomy**	2	
	Systemic Histology		
	21. Digestive system: Basic structure of GIT	2	
	22. Digestive system: Liver & Gall bladder, Pancreas	2	
	23. Urinary system: Kidney, Ureter & Suprarenal gland	2	
	24. Male Reproductive system: Testis & Prostate	2	
	25. Female Reproductive system: Ovary & Uterus	2	
	Total Hours	**50**	
Total Practical hours		**250 Hours**	

Non-Lecture activities

Sl. No	Non-Lecture Teaching Learning methods	Time Allotted per Activity (in Hours)
1.	Seminars/ Workshops	10
2.	Group Discussions	10
3.	Problem based learning	10
4.	Integrated Teaching	15
5.	Case Based Learning	10
6.	Self-directed Learning	15
7.	Tutorials, Assignments and projects	10
	Sub total	80
8.	Practical	250
	Total	**330**

Description of Non-Lecture Activities

Sl. No	Non-Lecture Teaching Learning methods	Time Allotted per Activity (in Hours)	Topics
1.	Seminars/ Workshops	10	Seminars: Guest Seminars, Student Seminars of Fast Learners can be conducted on any topic of Anatomy. E.g.: Shoulder joint, Liver etc. Workshop: Workshop can be arranged on important topics of Anatomy. E.g.: Abdomen, Thorax, CNS etc.
2.	Group Discussions	10	Group discussions can be conducted during practical hours on any topic of Practical and dissection. E.g.: Heart, Lungs, actions of joints etc.
3.	Problem based learning	10	Problem based learning can be conducted on any applied anatomy topic. E.g.: Bell's palsy, Frozen shoulder, Varicose veins etc.

4.	Integrated Teaching	15	**A] Horizontal Integration** Physiology: Any topic related to Physiology can be conducted. E.g.: Anatomy: Physiology Seminar on Respiratory System. Homoeopathic Subjects: Any topic related to Homoeopathic Materia Medica, Repertory, Organon of Medicine. E.g.: a) Integrated lecture with HMM - Homoeopathic drugs related to organs of Abdomen. b) Integrated lecture with Repertory – Rubrics related to structures of Thorax. c) Integrated lecture with Organon – Miasmatic influence on heredity. d) Integrated lecture with Homoeopathic Pharmacy - Action of Homoeopathic drugs on cellular level. **B] Vertical Integration** Gynecology – E.g.: Any topic related on female reproductive System. Surgery – E.g.: Integrated lecture on radiology. Medicine – E.g.: Embryological basis of major congenital anomalies of heart
5.	Case Based Learning	10	Case Based Learning can be conducted on any clinical topic of anatomy by presenting a case scenario with the help of Simulation or Audiovisual aid in the classroom. E.g.: A case of Bell's Palsy for the topic Facial Nerve, A case of Wrist drop for the topic Radial Nerve etc.
6.	Self-Directed Learning	15	Self-Directed Learning can be conducted for any topic of Anatomy. E.g.: Functional

			areas of cerebrum, Actions of Facial muscles.
7.	Tutorials, Assignments, Projects	10	Tutorials, Assignments, projects can be conducted on any topic of anatomy at the end of the topic.

6. TEACHING LEARNING METHODS

General Instructions

(a) Instructions in anatomy should be so planned as to present a general working knowledge of the structure of the human body both at micro and macro level and should correlate with function. Topics/syllabus should be planned out in parallel with other subjects for better understanding & to achieve integration.

(b) The amount of detail which a student is required to memorise should be reduced to the minimum but should connect to syllabus of other subjects and applied anatomy.

(c) Major emphasis should be laid on functional anatomy of the living subject rather than on the static structures of the cadaver and on general anatomical positions and broad relations of the viscera, muscles, blood vessels, nerves and lymphatics and study of the cadaver is the only means to achieve this.

(d) Students should know the basic applied anatomy & should not be burdened with minute anatomical details which have no clinical significance.

(e) Only such details which have professional or general educational value for the Homoeopathic medical students need to be focused.

(f) Normal radiological anatomy may also form part of practical or clinical training and the structure of the body should be presented linking functional aspects.

(g) A good part of theoretical lectures on anatomy can be transferred to tutorial classes with the demonstrations/ Projection / Dissection.

(h) Case based learning should be conducted for the students on various clinical conditions with the help of case scenario, simulation or Audiovisual aids as a Non-Lecture activity.

(i) Seminars and group discussions to be arranged periodically with view of presenting these subjects in an integrated manner.

(j) More stress on demonstrations and tutorials should be given. Emphasis should be laid on the general anatomical positions and broad relations of the viscera, muscles, blood vessels, nerves and lymphatics.

(k) There should be joint seminars with the departments of Physiology and Biochemistry, Repertory, HMM, Philosophy and Pharmacy which should be organized wherever necessary as per the topic.

(l) There should be a close correlation in the teaching of gross Anatomy, Histology, Embryology and Genetics and the teaching of Anatomy, Physiology including Biochemistry along with Homoeopathic subjects shall be integrated.

Though dissection of the entire body is essential for the preparation of the student for his clinical studies, the burden of dissection can be reduced and much saving of time can be affected with considerable reduction of the number of topographical details while following the above points.The purpose of dissection is to give the student an understanding of the body-Structure from Macro to Micro correlate to its function- Functional anatomy to integrate with Physiology and the dissection should be designed to achieve this goal.

Dissection should be preceded by a course of lectures on the general structure of the organ or the system under discussion and then its function. In this way anatomical and physiological knowledge can be presented to students in an integrated form and the instruction of the whole course of anatomy and physiology made interesting, lively practical or clinical. Syllabus of all the subjects of First BHMS course should be structured to run parallel, horizontally & vertically as far as possible to achieve maximum integration.

Students should be able to identify anatomical specimens and structures displayed in the dissection. Teaching and Demonstration methods should be supported with latest software/Practical/Charts/slides/Working or 3D Diagrams, Audio-Visual/ Multimedia presentation/Simulation to train clinical application.

The Teaching Learning activities in Anatomy requires change in structure & process in order to be more skill based & providing hands on experience.

The Teaching Learning methods with respect to Anatomy may be covered in the following manner:

a. **Class Room Lectures** – Oral Presentation, Board Work, Power point Presentation. **Tutorials** on the topics covered.
b. **Assignments –** For Slow Learners
c. **Practical Class** – Demonstration, Dissection, Surface Marking, Histology, Radiology
d. **Student Activities –** Working out the Assignments, Projects, PowerPoint presentations as assigned
e. **Case based Learning & Problem Based Learning (CBL & PBL)** for students to understand the application of knowledge of Anatomy with Clinical subjects.
f. **DOAP (Demonstration – Observation – Assistance – Performance)** For Clinical Anatomy.

7. CONTENT MAPPING (COMPETENCY TABLE)

1. General Anatomy
2. Developmental anatomy (Embryology)
3. Regional anatomy (Upper and Lower Extremities, Thorax, Abdomen, Pelvis & Perineum, Head, Neck & Face and Brain)

   3.1 Each of the region will be studied under the following headings

   (a) Osteology
   (b) Syndesmology and Arthrology (Joints)
   (c) Myology
   (d) Angiology
   (e) Neurology
   (f) Splanchnology (Viscera/Organ)
   (g) Histology
   (h) Surface anatomy
   (i) Applied anatomy
   (j) Radiographic anatomy
   (k) Correlation with homoeopathic subjects

Semester - I

1. Topic: General Anatomy

Learning Outcomes (LO): At the end of general anatomy, I-BHMS student must;

1. Describe the structure of a cell, its components and their function.
2. Recall the terminologies used in Anatomy.
3. Classify bones, muscles, joints and nerves
4. Mention the homoeopathy

5. hic drugs indicated for particular tissue/organ involvement.
6. Practice Ethics related to the learning of Anatomy.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment Summative	Integration Horizontal (H) / Vertical(V)
Hom UG-AN-1.1	Problem formulation/ Integration of Information Knowledge/	General Anatomy	K	Concept of cell as structural and functional unit of the body	1. Define cell 2. Name the components of cell 3. Mention their functions of cell organelle 4. Mention the types of cell division **5.** explain their significance	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-1.2		General Anatomy	K	Understanding of the four basic tissues that make up organs and systems	1. Describe the structure and location 2. Mention the characteristics 3. Function of each of the basic tissues	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Hom UG-AN-1.3. i			K	Understand role of DNA in carrying the genetic code and RNA in gene expression	1. Describe the structure of DNA and RNA 2. List the functions of DNA and RNA	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-1.3. ii	Problem formulation/ Integration of Knowledge/ Information gathering/Practical	General Anatomy	K	Describe the role of chromosomes in transfer or genetic material & role in cell division	1. Definition and number 2. Karyotyping 3. Barr body 4. Chromosomal abnormalities	Cognitive	Level 1 (Remember/ recall)	1. MK 2. DK 3. NK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-1.3. iii			K	Explain the concept of Gene as unit of inheritance	1. Definition 2. Functions 3. Types and location	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-1.3. iv			KH	Describe the types of inheritance and their role in hereditary diseases	1. Definition 2. Define autosomal inheritance 3. Define sex linked inheritance 4. Define mitochondrial inheritance	Cognitive	Level 2 (Remember/ recall)	1. MK 2. DK 3. DK 4. NK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-1.3. v	Problem formulation/ Integration of	General Anatomy	KH	Describe the genetic basis of diseases	1. Mention the types of genetic abnormalities 2. Describe the genetic basis of Down's syndrome 3. Explain miasmatic influence on heredity	Cognitive	Level 2 (understand/interpret)	1. DK 2. DK 3. NK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V) Organon (H)

Hom UG-AN-1.4.i			K	Definition and subdivisions of anatomy	1. Definition of anatomy 2. List the subdivisions of anatomy 1. Recall the methods of study in each sub division of anatomy	Cognitive	Level 1 (Remember)	1. MK 2. DK 3. DK 4.	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-
Hom UG-AN-1.4. ii			K	History of Anatomy	1. Recall the evolution of anatomy as a science 2. Enumerate the major contributors and their work	Cognitive	Level 1 (Remember)	1. NK 2. NK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-1.4.iii	Problem formulation/ Integration of	General Anatomy	K & KH	Anatomical Terms of position & movement	1. Define anatomical terms of position and movement 2. Apply the anatomical terms 3. Demonstrate the movements	Cognitive & Psychomotor	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK	Lecture Demonstration Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-

Hom UG-AN-1.4.iv			K	Skin, Superficial and Deep fasciae	1. Describe the structure, appendages of skin 2. Mention the functions of skin 3. Describe superficial fascia and its distribution 4. Describe deep fascia and its functions	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. DK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-1.4. v			K & KH	Muscles	1. Classify muscles 2. Classify skeletal muscles based on fascicular architecture and their blood and nerve supply 3. Explain the actions of skeletal muscles	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-14.vi	Problem formulation/ Integration of	General Anatomy	K & KH	Bones	1. Describe the structure and functions of bones 2. Classify bones 3. Describe the parts of growing long bone 4. Explain the blood supply of long bone	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Hom UG-AN-1.4.vii			K	Joints	1. Define joints 2. Classify joints 3. Describe the structure of synovial joint 4. Classify synovial joints 5. Mention the blood and nerve supply of joints	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. DK 5. DK 5.	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-1.4. viii			K	Blood vessels	1. Describe the types of blood vessels 2. Explain anastomosis & arteriovenous anastomosis 3. Describe the types of blood circulation 4. Describe foetal circulation	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment Summative Assessment**	**Integration Horizontal/ Vertical**

Hom UG-AN-14. ix	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	General Anatomy	K	Lymphatic system	1. Define the lymphatic system and mention its functions 2. Enumerate the components of lymphatic systems 3. Define mucosa associated lymphatic tissue and bronchus associated lymphatic tissue	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-1.4x			K & KH	Nerves	1. Classify nervous system 2. Describe neuron & neuroglia 3. Describe the formation of typical spinal nerve 4. Differentiate sympathetic and parasympathetic nervous systems	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-1.4. xi			K & KH	Glands	1. Define a gland 2. Describe exocrine and endocrine glands 3. Classify exocrine glands 4. Classify endocrine glands	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-1.5			K	Cell, Tissues, organs, Organ System	Describe the action of Homoeopathic drugs on cellular level.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated lecture	Viva Voce	-	Pharmacy , Homoeopathic Materia Medica (H),

2. Topic: Developmental Anatomy (Embryology)

Learning Outcomes (LO): At the end of embryology, I-BHMS student should be able to;

1. Describe evolution of life on earth and the developmental anatomy and genetics.
2. Explain the structural organization of man from micro to macro and its evolution from embryo.
3. Explain the evolution of different organs and systems from the embryo.
4. Enumerate the homoeopathic drugs indicated for particular genetic or developmental defect.

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-2.1	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Embryology	K & KH	Introduction to embryology	1. Define embryology 2. Enumerate the parts of male and female reproductive systems 3. Correlate meiosis with gametogenesis 4. Describe menstrual cycle	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Obstetrics and Gynecology (V)
Hom UG-AN-2.2			K & KH	Spermatogenesis	1. Define spermatogenesis 2. Describe the process of spermatogenesis 3. Describe spermiogenesis 4. Describe the structure of spermatozoon	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-2.3			K & KH	Oogenesis	1. Define Oogenesis 2. Describe the process of oogenesis 3. Describe formation of graafian follicle 4. Compare spermatogenesis and oogenesis	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Obstetrics and Gynecology (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-2.4 & 2.5	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Embryology	K & KH	Fertilization	1. Define fertilization 2. Describe the process of fertilization 3. Describe the process of cleavage and formation of blastocyst 4. Explain the clinical correlation with IVF	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. NK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-2.6			K	Formation of bilaminar germ disc	1. Describe the formation of amniotic cavity and yolk sac 2. Describe the formation of bilaminar germ disc 3. Describe the formation of extraembryonic mesoderm 4. Define chorion and amnion	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-
Hom UG-AN-2.7			K	Gastrulation	1. Define Gastrulation 2. Describe the formation of prochordal plate 3. Describe the formation of primitive streak 4. Describe the formation of germ layers 5. Mention derivatives of each germ layer	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. DK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-2.8	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Embryology	K	Intra embryonic mesoderm and formation of somites	1. Describe the parts of intra embryonic mesoderm 2. Describe the formation of somites and their derivatives 3. Define Sclerotome, myotome and dermatome	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-2.9			K	Ossification	1. Define ossification 2. Mention the types of ossification 3. Describe intramembranous ossification 4. Describe endochondral ossification	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-2.10			K	Notochord	1. Describe the formation of notochord 2. Mention the function and fate of notochord 3. Describe the formation of neural tube	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-2.11	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Embryology	K	Folding of the embryonic disc and formation of primitive gut tube	1. Explain the sagittal folding of embryo 2. Explain the transverse folding of embryo 3. Describe the parts of primitive gut tube	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-
Hom UG-AN-2.12			K	Placenta	1. Define amnion and chorion 2. Define decidua 3. Describe the formation of placenta 4. Mention the functions of placenta	Cognitive	Level 1 (Remember)	1. DK 2. DK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	-
Hom UG-AN-2.13			K	Stages of development	1. Describe the Development of embryo and layers of suppression. 2. Enumerate the homoeopathic drugs indicated for particular genetic or developmental defect	Cognitive	Level 1 (Remember/ recall)	1. NK	Integrated lecture	Viva Voce	-	Organon (H), Homoeopathic Materia Medica (H)

3. Topic: General Histology

Learning Outcomes (LO): At the end of embryology, I-BHMS student should be able to;

1. Describe microscopic structure of the basic tissues and clinically relevant structures.
2. Correlate the histological features with their functions.
3. Explain the possible changes in cells, tissues and organs due to injury or disease.

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-3.1	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	**Histology**	K & KH	Introduction to histology	1. Define histology 2. Describe parts of microscope 3. Explain the use of microscope	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-3.2			K	Epithelial tissue	1. Define epithelium 2. Mention the characteristics of epithelial tissue 3. Classify epithelia	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-3.3			K & KH	Connective tissue	1. Define connective tissue 2. Mention the characteristics of connective tissue 3. Classify connective tissue	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. M 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-3.4	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Histology	K	Cartilage	1. Classify cartilages 2. Describe the microscopic structure of hyaline cartilage 3. Describe the microscopic structure of fibro cartilage 4. Describe the microscopic structure of elastic cartilage	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-3.5			K	Bone	1. Describe haversian system 2. Describe the microscopic structure of L S and T S of compact bone 3. Describe the microscopic structure of spongy bone	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Hom UG-AN-3.6			K	Muscle	1. Classify muscle tissue 2. Describe the microscopic structure of L S and T S of skeletal muscle 3. Describe the microscopic structure of smooth muscle 4. Describe the microscopic structure of cardiac muscle	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-3.7	Problem formulation	Histology	K	Nervous tissue	1. Describe nerve 2. Describe T S of peripheral nerve 3. Describe L S of peripheral nerve	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Hom UG-AN-3.8			K	Skin	1. Describe microscopic structure of thin skin 2. Describe microscopic structure of thick skin 3. Describe appendages of skin	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-3.9			K	Lymphoid organs	1. Mention lymphoid organs 2. Describe the microscopic structure of lymph node, 3. Describe the microscopic structure of tonsil 4. Describe the microscopic structure of thymus 5. Describe the microscopic structure of spleen	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. MK 5. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**

Hom UG-AN-3.10	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Histology	K	Blood vessels	1. Classify blood vessels 2. Describe the microscopic structure of large artery 3. Describe the histology of medium sized artery 4. Describe the microscopic structure of large vein	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-3.11			K	Glands	1. Classify glands based on type of secretion 2. Describe the microscopic structure of serous gland 3. Describe the microscopic structure of mucous gland 4. Describe the microscopic structure of mixed gland	Cognitive	Level 1 (Remember)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

4.Topic: Upper Extremities

Learning Outcomes (LO): At the end of Upper Extremities, I-BHMS student should be able to;

1. Describe the anatomy of the bones of the upper extremities, their blood supply and applied anatomy.

2. Describe anatomy of the joints of the upper extremities, their blood supply, action and applied anatomy.

3. Describe the muscles of the upper extremities, their origin, insertion, nerve supply, action and applied anatomy.

4. Explain anatomy of the vessels and nerves of the upper extremities, their course, muscles they supply, relations and applied anatomy.

5. Describe the anatomy of mammary gland with its applied anatomy.

6. Describe the anatomy of axilla.

7. Enumerate homoeopathic drugs and rubrics indicated for particular involvement of bones, muscles, joints, nerves, blood vessels.

Sr No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
HomUG-AN-4.2, 4.6, 4.9, 4.10, 4.18 and 4.19	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Upper Extremity	K & KH	Anatomic al features of Pectoral region and axilla Back and Intermuscular spaces around scapula Arm and cubital fossa Fore arm Flexor and extensor retinacula Palmar aponeurosis and spaces in palmar spaces	1. Describe the contents of the regions of upper extremity 2. Recall the attachments, nerve supply and actions of the muscles in the regions 3. Describe the main joint, blood vessels and nerves in the region. 4. Identify the surface land marks in the region for surface marking	Cogniti ve	Level 1 (Remem ber/ recall)	1. MK 2. MK 3. MK 4. MK	Lectu re	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
HomUG-AN-4.4, 4.5 4.9 to 4. 12 & 4.20			K	Main blood vessels of the upper limb: Axillary artery, brachial artery Radial artery and ulnar artery and superficial veins of upper extremity	1. Describe the origin, extent, parts, branches and distribution of main arteries 2. Describe superficial and deep palmar arches 3. Describe the venous drainage of upper extremity 4. Describe their applied anatomy		Level 1 (Remem ber/ recall)	5. MK 1. MK 2. MK 3. MK	Lectu re	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H)
HomUG-AN-4.8, 4.10, 4.13 to 4.15			K	Describe the Anatomy of nerves of Upper extremity Median nerve, Ulnar nerve, Radial nerve, Musculocutaneous nerve and Axillary nerve	1. Describe the formation, course and relations of main nerves of the upper extremity 2. Mention their branches and their distribution 3. Describe the applied anatomy	Cogniti ve	Level 1 (Remem ber/ recall)	1. MK 2. MK 3. DK	Lectu re	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H) Medicine (V) Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
HomUG-AN-4.4	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information	Upper Extremity	K	Describe the anatomy of Brachial plexus	1. Define nerve plexus 2. Enumerate the root value of Brachial plexus 3. Mention the stages of formation of Brachial plexus 4. Name the branches of Brachial plexus 5. Enlist the deformities due to injuries to Brachial plexus	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology H)
HomUG-AN-4.3			K	Describe the anatomy of Breast (Mammary gland)	1. Define location & extent of breast 2. Describe structure of breast 3. Describe the relations, blood supply and nerve supply 4. Explain the lymphatic drainage of breast 5. Describe applied anatomy of breast	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V)

HomUG-AN-4.7, 4.16 &4.17			K	Describe the Anatomy of joints of Upper extremity Shoulder, Elbow, Radio-ulnar and wrist joints	1. Enumerate the joints of upper extremity 2. Describe the articulating surfaces, ligaments, blood and nerve supply of joints of upper extremity 3. Describe the movements of joints upper extremity 4. Describe the applied anatomy of joints of upper extremity	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V)
HomUG-AN-4.18			K	Structures of upper extremity	1. Enumerate the homoeopathic drugs related to structures of upper extremity. 2. Enumerate the rubrics related to structures of upper extremity.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated Lecture	Viva voce		Homoeopathic Materia Medica (H), Repertory (H).

5. Topic: Lower Extremity

Learning Outcomes (LO): At the end of Lower Extremities, I-BHMS student should be able to;

1.Describe the anatomy of the bones of the lower extremities, their blood supply, and applied anatomy.

2. Describe the anatomy of the joints of the lower extremities, their blood supply, action and applied anatomy.

3. Describe the anatomy of the muscles of the lower extremities, their origin, insertion, nerve supply, action and applied anatomy.

4. Describe the anatomy of the vessels and nerves of the lower extremities, their course, muscles they supply, relations and applied anatomy.

5. Enumerate the homoeopathic drugs indicated for particular involvement of bones, muscles, joints, nerves, blood vessels.

Sr. No	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
HomUG-AN-5.3 to 5.6, 5.8, 5.10 To 5.14	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Lower Extremity	K & KH	Front of the thigh, Femoral triangle, Medial side of thigh, Gluteal region, Back of the thigh and popliteal fossa, Front of the thigh and dorsum of the foot, Back & side of the leg, retinacula and sole of the foot	1. Describe Contents of the regions of lower extremity 2. Recall the attachments, nerve supply and actions of the muscles in the regions 3. Describe the main joint, blood vessels and nerves in the region. 4. Identify the surface land marks in the region for surface marking	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
HomUG-AN-5.4, 5.8 5.10 to 5.11, 5.14 & 5.18			K	Main blood vessels of the upper extremity: Femoral artery, Popliteal artery, Anterior tibial & Posterior tibial and Dorsalis pedis artery	1. Describe the origin, extent, parts, branches and distribution of main arteries 2. Describe superficial and deep plantar arches 3. Describe the venous drainage of lower extremity 4. Describe their applied anatomy		Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H)
HomUG-AN-5.2, 5.5,5.7, 5.10 to 5.12, 5.14			K	Describe morphology nerves of lower extremity Femoral, obturator, Sciatic, common peroneal and Tibial nerves	1. Describe the formation, course and relations of main nerves of the lower extremity 2. Mention their branches and their distribution 3. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H) Medicine (V) Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-5.2 & 5.7	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Lower Extremity	K	Describe the anatomy of Lumbar & Sacral plexuses	1. Define nerve plexus 2. Enumerate the root value of the plexuses 3. Describe the formation of the plexuses 4. Name the branches of sacral and lumbar plexus 5. Enlist the deformities due to injuries to lumbar & sacral plexuses	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology H)
HomUG-AN-5.9, 5.15 to 5.17			K	Describe the Anatomy of joints of Lower extremity Hip, Knee and Ankle Arches of the foot	1. Describe the articulating surfaces, ligaments, blood and nerve supply of joints of lower extremity 2. Describe the movements of joints lower extremity 3. Describe the applied anatomy of joints of lower extremity 4. Describe the formation of arches of foot 5. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V)
Hom UG-AN-5.18			K	Structures of lower extremity	1. Enumerate the homoeopathic drugs related to structures of lower extremity. 2. Enumerate the rubrics related to structures of lower extremity.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated Lecture	Viva voce		Homoeopathic Materia Medica (H), Repertory (H).

6. Topic: Thorax

Learning Outcomes (LO): At the end of Thorax, I-BHMS student should be able to;

1. Describe the parts of Respiratory and Cardiovascular system with their applied anatomy.

2. Enumerate the homoeopathic drugs and rubrics related to thorax.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-6.1 & 6.2	Problem formulation/ Integration of Information Knowledge/	Thorax	K	Introduction & Trachea	1. Describe the Boundaries and content of thoracic cage 2. Describe the morphology of trachea 3. Mention the Blood supply and nerve supply 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. DK 3. DK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-6.3			K	Pleura	1. Define pleura 2. Mention the layers 3. Describe the parts of parietal pleura 4. Mention its blood and nerve supply 5. Describe its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK 5. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-6.4			K	Lungs	1. Describe the external features of the lung 2. Compare the features of right and left lungs 3. State the blood supply and nerve supply 4. Explain the broncho-pulmonary segments and their applied aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. DK 3. DK 4. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-6.5	Problem formulation/ Information gathering/Practical Skills/Information management/synthesis Integration of Knowledge/	Thorax	K	Mediastinum	1. Define mediastinum 2. Describe the boundaries of mediastinum 3. Mention the contents of each mediastinum 4. Describe its applied aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H)
Hom UG-AN-6.6			K	Pericardium and Heart	4. Describe the morphology of the pericardium 5. Describe the external features of the heart 6. Describe the internal features of the chambers of heart 7. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	4. MK 5. MK 6. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H)
Hom UG-AN-6.7			K	Blood supply of heart	1. Mention the arteries and veins supplying the heart 2. Describe the course and distribution of right and left coronary arteries 3. Describe the course and drainage of coronary sinus 4. Describe the applied aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ LAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-6.8	Problem formulation/ Information gathering/Practical Skills/Information Integration of Knowledge/	Thorax	K	Superior mediastinum: Arch of aorta	1. Describe the extent, course, convexities of arch of aorta 2. Mention the relations 3. Name the branches 4. Describe the applied aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-6.9			K	Superior mediastinum: Superior Vena cava	1. Describe the formation of SVC 2. Describe its course and relations 3. Name the tributaries 4. Describe it applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-6.10			K	Posterior mediastinum: Azygous vein & Thoracic duct	1. Describe the origin, course and tributaries of azygos vein 2. Mention the relations 3. Describe the origin, course and tributaries of thoracic duct 4. Mention the relations of thoracic duct 5. Describe their applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK 4. DK 5. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D)	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) / Vertical(V)
Hom UG-AN-6.11	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Thorax	K	Posterior mediastinum: Oesophagus & Descending thoracic aorta	1. Describe the morphology and relations of the oesophagus 2. Mention constrictions in its course 3. Mention the blood supply and nerve supply 4. Describe the extent, branches and relations of descending thoracic aorta 5. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-6.12			K	Diaphragm	1. Describe the attachments, nerve supply and actions of diaphragm 2. Mention the major openings in the diaphragm and structures passing through it. 3. Describe the nerve and blood supply 4. Describe its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK 5. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Hom UG-AN-6.13			K	Systemic embryology: Development of Heart and lung	1. Describe the formation of primitive heart tube 2. Describe the formation of the atria and ventricles of the heart 3. Explain the embryological basis of major congenital anomalies of heart 4. Describe formation of lung	Cognitive	Level 1 (Remember/ recall)	6. DK 7. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Sl. No.	**Generic Competency**	**Subject Area**	**Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D)**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert s level**	**Must know (MK) / Desire to know (DK) / Nice to know (NK)**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal (H) I/ Vertical(V)**
Hom UG-AN-6.14	Problem formulation/ Integration of Knowledge/ Information gathering/Practical	Thorax	K	Systemic histology: Trachea and Lung	1. Describe the microscopic structure of trachea and lung 2. Correlate with their functions 3. Explain the applied aspect and correlate with histopathology	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Pathology (V)

Hom UG-AN-6.15			K	Structures of Thorax.	1. Enumerate the homoeopathic drugs related to thorax. 2. Enumerate the rubrics related to thorax.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated lecture	Viva Voce	-	Homoeopathic Materia Medica (H), Repertory. (H)

7.Topic: Abdomen

Learning Outcomes (LO): At the end of Abdomen, I-BHMS student should be able to;

1. Describe the anatomy of the abdomen and pelvic organs with their applied anatomy.

2. Enumerate the homoeopathic drugs and rubrics indicated for involvement of the abdominal and pelvic organs.

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**

Hom UG-AN-7.1	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K	Introduction	1. Describe the regions of abdominal cavity 2. Name the contents of abdominal cavity and pelvic cavity 3. Describe perineum	Cognitive	Level 1 (Remember	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-7.2			K & KH	Anterior abdominal wall	1. Describe the muscles of anterior abdominal wall and their actions 2. Describe the boundaries and contents of inguinal canal 3. Explain the applied anatomy of inguinal canal	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)
Hom UG-AN-7.3			K & KH	Peritoneum	1. Define peritoneum 2. Describe greater sac, lesser sac and epiploic foramen 3. Describe the folds of peritoneum 4. Describe recto-uterine pouch and hepatorenal pouch 5. Define mesoappendix, transverse mesocolon and sigmoid mesocolon	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.4	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum		Stomach	1. Describe the morphology of stomach 2. Describe the relations of stomach 3. Describe the interior of stomach 4. Describe the blood and nerve supply of stomach 5. Explain the applied anatomy of stomach	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Surgery (V)
rHom UG-AN-7.5			K & KH	Liver	1. Describe the morphology of liver 2. Describe the ligaments of liver 3. through porta hepatis 4. Describe the blood and nerve supply of liver 5. Explain the applied anatomy of liver	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-7.6			K & KH	Extra hepatic biliary apparatus	1. Mention the parts of extra hepatic biliary apparatus 2. Describe the morphology of gall bladder and its interior 3. Describe the blood and nerve supply of gall bladder 4. Describe the formation of bile duct 5. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK 5. MK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.7	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K & KH	Spleen	1. Describe the morphology of spleen 2. Describe the ligaments of spleen 3. Describe the functions of spleen and its applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. NK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-7.8			K & KH	Duodenum	1. Describe the morphology of duodenum 2. Describe interior of duodenum 3. Describe the blood and nerve supply of duodenum 4. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. NK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-7.9			K & KH	Pancreas	1. Describe the morphology of pancreas 2. Describe duct system of pancreas 3. Describe the blood and nerve supply and applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. NK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.10	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K & KH	Jejunum, Ileum and Superior mesenteric artery	1. Mention the characteristics of small intestine 2. State the differences between jejunum and ileum 3. Describe the origin, branches and distribution of superior mesenteric artery	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. NK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-7.11			K & KH	Caecum and appendix	1. Mention the morphology of caecum and vermiform appendix 2. Describe their relations, blood and nerve supply 3. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. NK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)
Hom UG-AN-7.12			K & KH	Large intestine	1. Mention the parts of large intestine 2. Mention the characteristics of large intestine 3. Mention the differences between large and small intestines Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.13	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K & KH	Portal venous system	1. Define portal vein 2. Describe its formation, course and relations 3. Mention the tributaries 4. Mention the sites of portacaval anastomosis and its applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Surgery (V)
Hom UG-AN-7.14			K & KH	Kidney	1. Describe the morphology of kidney 2. Mention the relations of the kidneys 3. Describe the structure of kidney in coronal section 4. Describe the blood supply of kidneys 5. Explain the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK 4. DK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-7.15			K & KH	Supra renal glands	1. Describe the morphology of supra renal glands 2. Mention their relations 3. Mention the functions 4. Describe the blood supply of supra renal glands 5. Explain the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. DK 4. DK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.16	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K & KH	Abdominal aorta	1. Describe the origin and extent of abdominal aorta 2. Mention the relations 3. Name the branches 4. Describe the course and distribution of coeliac trunk 5. Describe the course and distribution of coeliac trunk	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. MK 4. DK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Surgery (V)
Hom UG-AN-7.17			K & KH	Posterior abdominal wall and Inferior vena cava	1. Name the structures in the posterior abdominal wall 2. Describe the origin, course relations and tributaries of inferior vena cava 3. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. DK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Hom UG-AN-7.18			K & KH	Urinary bladder	1. Describe the morphology of urinary bladder 2. Describe the relations of urinary bladder 3. Describe the ligaments of urinary bladder 4. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Surgery (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-7.19	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K & KH	Ureter	1. Describe the extent and parts of ureter 2. Describe the course and relations 3. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)
Hom UG-AN-7.20			K & KH	Prostate gland	1. Describe the morphology of prostate gland 2. Describe the relations of prostate gland 3. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Hom UG-AN-7.21			K & KH	Ovary	1. Describe the morphology of ovary 2. Describe the relations of ovary 3. Name the ligaments of ovary 4. Mention the blood supply of ovary 4. Describe the applied anatomy of ovary	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. NK 4. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Obstetrics and Gynecology (V)

`

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-7.22	Problem formulation/ Integration of Knowledge/ Information gathering/Practical	bdomen, Pelvis & Perineum	K & KH	Uterus	1. Describe the morphology of uterus 2. Describe the relations of Uterus 3. Name the ligaments and supports of uterus 4. Mention the blood supply of uterus 5. Describe the applied anatomy of uterus	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. NK 4. DK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Obstetrics and Gynecology (V)

Hom UG-AN-7.23			K & KH	Fallopian tube	1. Describe the morphology of fallopian tube 2. Describe the relations of fallopian tube 3. Describe the applied anatomy of fallopian tube	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Obstetrics and Gynecology (V)
Hom UG-AN-7.24			K & KH	Scrotum and Testis	1. Describe the morphology of scrotum 2. Mention its blood and nerve supply 3. Describe the morphology of testis 4. Describe the applied anatomy of testis	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Physiology (H) Surgery (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-7.25	Problem formulation/ Integration of Knowledge/	Abdomen, Pelvis & Perineum	K & KH	Vas deferens	1. Mention the extent of ductus deferens, its course and relations 2. Mention its blood and nerve supply 3. Describe the applied anatomy of vas deferens	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Surgery (V)

Hom UG-AN-7.26			K & KH	Rectum	1. Describe the morphology of rectum and its relations 2. Mention its blood and nerve supply 3. Describe the applied anatomy of rectum	Cogniti ve	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Surgery (V)
Hom UG-AN-7.27			K & KH	Anal canal	1. Describe the morphology of anal canal and its relations 2. Mention its blood and nerve supply 3. Describe the applied anatomy of anal canal	Cogniti ve	Level 1 (Remember) & Level 2 (understand)	5. MK 6. MK 7. MK 8. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ Viva Voce	Surgery (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert's level**	**Must know/ Desire to know/ Nice to know**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal/ Vertical**
Hom UG-AN-7.28	Problem formulation/ Integration of Knowledge/ Information	Abdomen, Pelvis & Perineum	K & KH	Wall of pelvis including pelvic diaphragm	1. Describe the structures that form the walls and pelvic diaphragm 2. Describe the main blood vessels and nerves pelvis and perineum 3. Describe their applied aspect	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. DK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Hom UG-AN-7.29			K & KH	Perineum: superficial and deep perineal pouches	1. Define perineum and mention its sub divisions 2. Describe the boundaries and contents of superficial and deep perineal pouches 3. Describe the applied anatomy	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)
Hom UG-AN-7.30			K & KH	Ischiorectal fossa	1. Describe the morphology of ischiorectal fossa 2. Mention the contents 3. Describe the applied anatomy of anal canal	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.31 & 7.32	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Abdomen, Pelvis & Perineum	K & KH	Systemic embryology: Development of Digestive system and Urogenital system	1. Explain the process of formation of primitive and development of digestive system including liver and pancreas 2. Explain the process of development of kidney, urinary bladder and ureter 3. Explain the process of formation of male and female gonads and reproductive organs.	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. DK 2. DK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)
Hom UG-AN-7.33 to 7.36			K & KH	Systemic histology: Microscopic structure of Digestive, urinary, reproductive systems and Supra renal gland	1. Describe the microscopic structure of digestive, urinary, reproductive systems and supra renal gland 2. Correlate with their functions 3. Explain the applied aspect and correlate with histopathology	Cognitive	Level 1 (Remember) & Level 2 (understand)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Hom UG-AN-7.37			K	Structures of Abdomen & Pelvis.	1.Enumerate the homoeopathic drugs related to Structures of Abdomen & Pelvis. 2. Enumerate the rubrics related to Structures of Abdomen & Pelvis.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated lecture	Viva Voce	-	Homoeopathic Materia Medica (H), Repertory. (H)

8.Topic: Head Neck Face & Special Senses

Learning Outcomes (LO): At the end of Head Neck & Face, I-BHMS student should be able to;

1. Describe the anatomy of the bones of the Head Neck &Face, their blood supply, and applied anatomy.
2. Describe the anatomy of the joints of the Head Neck & Face, their blood supply, action and applied anatomy.
3. Explain the anatomy of the muscles of the Head Neck & Face, their origin, insertion, nerve supply, action and applied anatomy.
4. Describe the atomy of the vessels and nerves of the Head Neck & Face, their course, muscles they supply, relations and applied anatomy.
5. Describe the triangles of the Neck with its applied anatomy.
6. Identify a particular bone of Head Neck & Face on X-Ray.
7. Describe the structure of the special senses organs with its applied anatomy.
8. Enumerate the homoeopathic drugs and rubrics related to structures of HNF.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D)	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.1 and 8.2	Problem formulation/ Integration of Information Knowledge/	Head, Neck and Face	K	Introduction & Scalp	1. Mention the main areas of the head and neck region 2. Describe the layers of the scalp 3. Enumerate the blood and nerves supplying the scalp 4. Describe the applied anatomy of scalp	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V)
Hom UG-AN-8.3			K	Face – Muscle, Nerve and Blood vessels	1. Name the muscles of facial expression 2. Mention the blood and nerve supply of face 3. Explain related applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.4	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Head, Neck and Face	K	Lachrymal apparatus	1. Mention the components of lachrymal apparatus 2. Describe the location and function of each of the components of lachrymal apparatus 3. Describe their applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.5			K	Side of the neck: Posterior triangle	1. Define triangles of neck 2. Describe the boundaries and contents of posterior triangle 3. Describe applied aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V)
Hom UG-AN-8.6			K	Front of the neck and Anterior triangle	1. Describe the sub divisions of anterior triangle 2. Describe the boundaries and contents of carotid triangle and digastric triangle 3. Describe the principal neurovascular bundle of the neck 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. Dk 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.7	Problem formulation/ Information gathering/Practical Integration of Knowledge/ Skills/Information	Head, Neck and Face	K	Deep Cervical fascia	1. Describe the parts of deep cervical fascia 2. Describe the attachments and modifications 3. Explain applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.8			K	Back of the neck: suboccipital triangle	1. Describe the features of the back of the neck 2. Describe the boundaries and contents of occipital triangle	Cognitive	Level 1 (Remember/ recall)	1. MK 2. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.9			K	Content of the Vertebral Canal	1. List the contents of the vertebral canal 2. Describe the meninges of the spinal cord 3. Describe the internal vertebral plexus of veins and their applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.10	Problem formulation/ Information gathering/Practical Skills/Information	Head, Neck and Face	K	Parotid Gland	1. Describe the surfaces, border and relations of parotid gland 2. Mention the blood and nerve supply of the parotid gland 3. List the structures inside the parotid gland and parotid duct 4. Describe the clinical aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.11			K	Submandibular gland	1. Describe the morphology of submandibular gland 2. Mention its blood and nerve supply 3. Describe the applied aspect	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.12			K	Muscles of Mastication	1. Name the muscles of mastication 2. Describe their attachments, nerve supply and actions 3. Describe related applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.13	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Head, Neck and Face	K	Temporo-Mandibular Joint	1. Describe the articulation of TM joint 2. Enumerate the ligaments of the joint 3. Describe the relations 4. Explain the movements of the joint 5. Describe its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.14			K	Thyroid Gland	1. Describe the location, external features and relations 2. Describe the blood and nerve supply 3. Describe its development 4. Explain the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V)
Hom UG-AN-8.15			K	Cranial cavity: Dura mater, Dural venous sinuses & Pituitary gland	1. Describe the contents of cranial cavity 2. Describe morphology of pituitary gland and its clinical importance 3. Describe the folds of dura mater 4. Classify dural venous sinuses 5. Explain anatomy and clinical importance of cavernous sinus	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D)	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.16	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information	Head, Neck and Face	K	Contents of the Orbit	1. Name the contents of orbit 2. Describe the fasciae around eye ball 3. Describe the course and distribution of ophthalmic nerve 4. Describe blood vessels in the orbit 5. Describe the connections and distribution of ciliary ganglion	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. MK 5. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V) Medicine (V)
Hom UG-AN-8.17			K	Extra Ocular Muscles	1. Name the extra ocular muscles 2. Describe their attachments, nerve supply and actions 3. Discuss the clinical anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-8.18			K	Oral cavity	1. Describe the parts and structure of tooth 2. Explain blood and nerve supply of tooth 3. Describe applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.19	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Head, Neck and Face	K	Soft palate and palatine tonsil	1. Describe the structure, muscles, blood and nerve supply of soft palate 2. Define Waldayer's lymphatic ring 3. Describe the features, blood and nerve supply of palatine tonsil 4. Describe the applied anatomy of palatine tonsil	Cognitive	Level 1 (Remember/ recall)	1. MK 2. NK 3. MK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (H)
Hom UG-AN-8.20			K	Tongue	1. Describe the parts, features of the tongue 2. Describe the blood and nerve supply of tongue 3. Describe applied anatomy of tongue	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-8.21			K	Pharynx	1. Describe the parts of the pharynx and their features 2. Describe the constrictors of pharynx 3. Describe the blood and nerve supply 4. Describe its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ.LAQ Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.22	Knowledge/ Integration of Skills/Information Problem formulation/ gathering/Practical Information	Head, Neck and Face	K	Larynx	1. Describe the cartilages of larynx 2. Describe the interior of larynx 3. Describe its blood and nerve supply 4. Explain its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H)
Hom UG-AN-8.23			K	Nose and paranasal air cavities	1. Describe the features, blood and nerve supply of nasal septum and lateral wall of the nose 2. Describe the features, blood and nerve supply of paranasal air sinuses 3. Describe its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ Viva Voce	Physiology (H) Surgery (V)
Hom UG-AN-8.24			K	Ear: middle ear cavity	1. Mention the parts of the ear 2. Describe the parts, boundaries and contents of middle ear cavity 3. Describe features of ear ossicles 4. Describe the applied anatomy of middle ear cavity	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Surgery (V) Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.25	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information	Head, Neck and Face	K	Eustachian tube	1. Describe the parts of the auditory tube 2. Describe its relations 3. Mention the blood and nerve supply 4. Describe its clinical anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)
Hom UG-AN-8.26			K	Eyeball	1. Describe the structure and location 2. Mention the characteristics 3. Function of each of the basic tissues	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ.Viva Voce	Physiology (H)
Hom UG-AN-8.27			K	Common & Internal carotidartery	1. Describe the origin, course relations and branches of CCA 2. Describe the origin, parts, course relations and distribution of ICA 3. Describe their applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Surgery (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.28	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/Information management/synthesis	Head, Neck and Face	K	External carotid artery	1. Describe the origin, parts, course relations and distribution of ECA 2. Describe the course, relations and distribution of facial, lingual, maxillary and superficial temporal arteries 3. Describe their applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H)
Hom UG-AN-8.29			K	Vertebral artery and middle meningeal artery	1. Describe the parts, course, relations and branches of vertebral artery 2. Describe the parts, course, relations and branches of middle meningeal artery 3. Describe its applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)
Hom UG-AN-8.30			K	Internal Jugular vein	1. Describe the formation of IVC 2. Describe the course and relations of IVC 3. Name the tributaries 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-8.31	Problem formulation/ Integration of Information Knowledge/	Head, Neck and Face	K	Systemic histology: Thyroid gland, Pituitary gland and Tongue	1. Describe the microscopic structure of thyroid gland, pituitary gland and tongue 2. Correlate with their functions 3. Explain the applied aspect and correlate with histopathology	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Pathology (V)
Hom UG-AN-8.32			K	Systemic embryology: Pharyngeal arches: derivatives	1. Describe the formation of pharyngeal arches 2. Name the derivatives of pharyngeal arches 3. Describe the formation of tongue and thyroid gland	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ, Viva Voce	Physiology (H)
Hom UG-AN-8.33			K	Structures of HNF	1. Enumerate the homoeopathic drugs related to the structures of HNF 2. Enumerate the rubrics related to the structures of HNF.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated Lecture	Viva voce	-	Homoeopathic Materia Medica (H), Repertory (H)

9.Topic- Brain- CNS System

Learning Outcomes (LO): At the end of CNS, I-BHMS student should be able to;

1. Describe the structure of Brain and CNS with their applied anatomy.
2. Classify nervous system and identify the parts of the brain and their features and internal structure.
3. Describe the origin and course of cranial nerves.
4. Enumerate the homoeopathic drugs and rubrics related to the structures of CNS.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-9.1	Problem formulation/ Integration of Information Knowledge/	CENTRAL NERVOUS SYSTEM: BRAIN	K	Introduction	1. Describe the parts of the nervous system 2. Mention the parts of the brain 3. Describe the structure of neuron and neuroglia 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ LAQ. Viva Voce	Physiology (H)
Hom UG-AN-9.2			K	Meninges & CSF	1. Describe the layers of meninges 2. Define Cisterns 3. Describe the ventricles 4. Describe the formation, circulation and functions of the CSF 5. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK 5. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-9.3			K	Spinal cord	1. Describe the morphology of spinal cord 2. Describe the structure in T.S 3. Mention the main contents of gray and white matter of SC 4. Mention the blood supply of spinal cord 5. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK 4. DK 5. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert s level**	**Must know (MK) / Desire to know (DK) / Nice to know (NK)**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal (H) I/ Vertical(V)**
Hom UG-AN-9.4	Problem formulation/ Integration of Knowledge/ Information	CENTRAL NERVOUS SYSTEM:	K	Medulla oblongata	1. Describe the external features 2. Describe the internal structures in the transverse sections 3. Describe the blood supply 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. DK 3. DK 4. MK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-9.5			K	Pons	1. Describe the external features 2. Describe the structures in the transverse section 3. Describe the blood supply 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-9.6			K	Cerebellum	1. Describe the location and external features 2. Describe the division and connections of cerebellum 3. Enumerate cerebellar peduncles 4. Name intra cerebellar nuclei 5. Describe the blood supply 6. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK 4. DK 5. DK 6. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. LAQ Viva Voce	Physiology (H) Medicine (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert s level**	**Must know (MK) / Desire to know (DK) / Nice to know (NK)**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal (H) I/ Vertical(V)**
Hom UG-AN-9.7	Problem formulation/ Integration of Knowledge/ Information	CENTRAL NERVOUS SYSTEM:	K	Fourth ventricle	1. Describe the boundaries of the ventricle 2. Explain the features 3. Mention the structures in the floor of IV Ventricle 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-9.8			K	Mid-brain	1. Describe the external features 2. Describe the structures in the transverse section 3. Describe the blood supply 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ.Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-9.9			K	Diencephalon: Thalamus & Hypothalamus	1. Name the parts of diencephalon 2. Describe the nuclei of thalamus and its functions 3. Describe the nuclei and functions of hypothalamus 4. Explain clinical significance	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	**Generic Competency**	**Subject Area**	**Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D**	**Specific Competency**	**Specific learning objectives:** At the end of the session student should be able to	**Bloom's Domain**	**Guilbert s level**	**Must know (MK) / Desire to know (DK) / Nice to know (NK)**	**Teaching Learning Method/Media**	**Formative Assessment**	**Summative Assessment**	**Integration Horizontal (H) I/ Vertical(V)**
Hom UG-AN-9.10	formulation/ Knowledge/	CENTRAL NERVOUS SYSTEM:	K	Third Ventricle	1. Describe the boundaries of the ventricle 2. Explain the features 3. Name the structures in the floor of III Ventricle 4. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK 4. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-9.11	Problem Integration		K	Lateral Ventricle	1. Describe the boundaries of the ventricle 2. Explain the features 3. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H)

Hom UG-AN-9.12			K	Cerebrum: external features	1. Describe the external features 2. Name major sulci and Gyri 3. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-9.13	formulation/ Knowledge/	CENTRAL NERVOUS SYSTEM:	K	Functional areas of cerebral cortex	1. Mention the functional area and their importance 2. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-9.14	Problem Integration of		K	Basal ganglia	1. Name the basal ganglia 2. Describe their location and blood supply 3. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-9.15			K	White matter of cerebrum: Corpus callosum & Internal capsule	1. Classify white matter of cerebrum 2. Describe the parts of corpus callosum 3. Describe the parts and composition of internal capsule 4. Mention the blood supply of internal capsule	Cognitive	Level 1 (Remember/ recall)	4. DK 5. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) /Knows how (KH) / Shows how (SH) /Does (D) K/KH/ SH/D	Specific Competency	Specific learning objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert s level	Must know (MK) / Desire to know (DK) / Nice to know (NK)	Teaching Learning Method/Media	Formative Assessment	Summative Assessment	Integration Horizontal (H) I/ Vertical(V)
Hom UG-AN-9.16	formulation/ Knowledge/	CENTRAL NERVOUS SYSTEM:	K	Blood supply of brain	1. Mention the blood supply to the brain 2. Explain the formation, branches and distribution of circle of Willis 3. Describe the applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. DK	Lecture	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-9.17	Problem Integration of		K	Cranial nerves	1. Describe the origin, course, branches and distribution of major cranial nerves 2. Describe applied anatomy	Cognitive	Level 1 (Remember/ recall)	1. MK 2. MK 3. MK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)

Hom UG-AN-9.18			K	Systemic embryology: Development of Brain	1. Describe the formation and fate of neural tube 2. List the derivatives of neural crest 3. Describe the formation of eye ball 4. Describe the formation of pituitary gland	Cognitive	Level 1 (Remember/ recall)	1. DK 2. DK 3. Dk 4. DK	Lecture Group discussion	MCQ, SAQ.	MCQ, SAQ. Viva Voce	Physiology (H) Medicine (V)
Hom UG-AN-9.19			K	Structures of CNS	1. Enumerate the homoeopathic drugs related to the structures of CNS. 2. Enumerate the rubrics related to the structures of CNS.	Cognitive	Level 1 (Remember/ recall)	NK	Integrated Lecture	Viva voce	-	Homoeopathic Materia Medica (H), Repertory (H)

PRACTICAL:

Topic – Histology

Learning Outcome- At the end of Histology, I-BHMS student should be able to;

1. Describe a particular organ and tissue through its histological features.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How (SH)/ Does (D)	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/ Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-1.1-1.10 3.23 3.24 4.6 5.11 7.24 to 7.29	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information	Histology	K	Histological & functional Correlation basic tissues and organs of the body	1. Identify the tissue/organ under microscope 2. Draw & label a schematic diagram to indicate the microscopic structure 3. Discuss Its characteristic features 4. Correlate the microscopic structure with its normal function	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. MK 4. DK	DOPS session	Spotting/OSPE/Practical Performance	Practical performance / Checklist	Physiology (H) Pathology (V)

Upper Extremities

Learning Outcomes (LO): At the end of Upper Extremity, I-BHMS student should be able to;

1. Describe the anatomy of the bones of the upper extremity, their blood supply, and applied anatomy.

2. Describe the anatomy of the joints of the upper extremity, their blood supply, action and applied anatomy.

3. Describe the anatomy of the muscles of the upper extremity, their origin, insertion, nerve supply, action and applied anatomy.

4. Describe the anatomy of the vessels and nerves of the upper extremity, their course, muscles they supply, relation and applied anatomy.

5. Identify a particular bone and joint of upper extremity on X-Ray.

6. Trace the course of the vessels and nerves of the upper extremity on the cadaver.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Media/Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-2.1 to 2.7	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Upper Extremity	K	Osteology of upper extremity	1. Describe the laterality and general features of the bone 2. Describe the major attachments 3. Describe ossification 4. Describe the applied anatomy 5. Draw the surface marking of the major structures in the regions using surface landmarks	Cognitive	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK	Demonstration	Spotting/OSPE/Practical Performance	Practical/ Check list	Surgery (V)
Hom UG-AN-2.8 to 2.14			K	Dissection/ Demonstration	1. Describe the important surface land marks in the region 2. Identify major muscles, blood vessels and nerves including fascial structures of clinical importance 3. Identify articular surfaces of major joints	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK				

					4. Correlate features and normal functioning of joints							
Hom UG-AN-2.15			K	Radiological anatomy of upper extremity	1. Describe the normal appearance and relationship of bones and joints in a normal radiograph (X-ray) of the region	Cognitive	Level 1 (Remember / Recall)	1. MK				

Topic: Head Neck Face

Learning Outcomes (LO): At the end of Head Neck & Face, I-BHMS student should be able to;

1. Describe the anatomy of the bones of the Head Neck & Face, their blood supply and applied anatomy.
2. Describe the anatomy of the joints of the Head Neck & Face, their blood supply, action and applied anatomy.
3. Describe the anatomy of the muscles of the Head Neck & Face, their origin, insertion, nerve supply, action and applied anatomy.
4. Describe the anatomy of the vessels and nerves of the Head Neck & Face, their course, muscles they supply, relation and applied anatomy.
5. Identify individual bones of Head Neck & Face on X-Ray.
6. Demonstrate the projection of structures of Head, Neck & Face on the cadaver.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How (SH)/ Does (D)	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/ Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-3.1 to 3.6	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Upper Extremity	K	Osteology of Head, Neck & Face	1. Describe the general features of the skull, hyoid bone, cervical vertebrae & mandible 2. Describe the major attachments on mandible 3. Mention clinically significant ossification features 4. Draw the surface marking of the major structures in the regions using surface landmarks	Cognitive	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK	Demonstration	Spotting/OSPE/Practical Performance	Practical/ Check list	Surgery (V)
Hom UG-AN-3.7 to 3.21			K	Dissection/ Demonstration	1. Describe the important surface land marks in the region 2. Identify major viscera, muscles, blood vessels and nerves including fascial structures of clinical importance 3. Identify articular surfaces of major joints 4. Correlate features and normal functioning of joints	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK				
Hom UG-AN-3.22			K	Radiological anatomy of	1. Describe the normal appearance and relationship of bones and joints in a normal	Cognitive	Level 1 (Remember / Recall)	1. MK				

				Head, Neck & Face	radiograph (X-ray) of the region							

Topic- Brain- CNS System

Learning Outcomes (LO): At the end of CNS, I-BHMS student should be able to;

1. Describe the anatomy of the Brain and its applied anatomy.
2. Classify CNS and describe the parts of brain.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How (SH)/ Does (D)	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/ Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical

4. 1 to 4.5	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Central Nervous System	K	Describe normal features of brain and spinal cord	1. Identify parts of brain on a specimen/model 2. Describe normal location and relationship of brain and spinal cord 3. Describe its applied anatomy	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. DK	DOAP session	Spotting/OSPE/Practical Performance	Practical performance / Checklist	Physiology (H) Pathology (V)

Topic: Thorax

Learning Outcomes (LO): At the end of Thorax, I-BHMS student should be able to;

1. Describe the anatomy of the Respiratory and Cardiovascular system with their applied anatomy.

2. Identify the organs of the Respiratory and Cardiovascular system.

3. Explain features of X-ray thorax.

4. Demonstrate surface projection of thoracic organs.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How (SH)/ Does (D)	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/ Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-5.1 to 5.3	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Upper Extremity	K	Osteology of Thorax	1. Describe the general features of the sternum, ribs and thoracic vertebrae 2. Describe the major attachments on mandible 3. Mention clinically significant ossification features 4. Draw the surface marking of the major structures in the regions using surface landmarks	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK	Demonstration	Spotting/OSPE/Practical Performance	Practical/ Check list	Surgery (V)
Hom UG-AN-5.4 to 5.9			K	Dissection/ Demonstration	1. Describe the important surface land marks in the region 2. Describe the morphology of lung and its relations. 3. Describe the external features of heart and interior of its chambers 4. Identify major contents of superior and posterior mediastina	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK				
Hom UG-AN-5.10			K	Radiological anatomy of Thorax	1. Interpret normal chest radiograph in conventional P-A view	Cognitive	Level 1 (Remember / Recall)	1. MK				

Topic: Lower Extremities

Learning Outcomes (LO): At the end of Lower Extremity, I-BHMS student should be able to;

1. Describe the anatomy of the bones of the Lower extremity, their blood supply and applied anatomy.
2. Describe the anatomy of the joints of the Lower extremity, their blood supply, action and applied anatomy.
3. Describe the anatomy of the muscles of the Lower extremity, their origin, insertion, nerve supply, action and applied anatomy.
4. Describe the anatomy of the vessels and nerves of the Lower extremity, their course, muscles they supply, relations and applied anatomy.
5. Identify a particular bone and joint of Lower extremity on X-Ray.
6. Trace the course of the vessels and nerves of the Lower extremity on the cadaver.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How (SH)/ Does (D)	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/ Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-6.1 to 6.7	Problem formulation/ Integration of Knowledge/ Information gathering/Practical	Upper Extremity	K	Osteology of lower extremity	1. Describe the laterality and general features of the bones of the region 2. Describe the major attachments 3. Mention clinically important ossification features 4. Draw the surface marking of the major structures in the regions using surface landmarks	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK	Demonstration	Spotting/OSPE/Practical Performance	Practical/ Check list	Surgery (V)

Hom UG-AN-6.8 to 6.15			K	Dissection/ Demonstration	1. Describe the important surface land marks in the region 2. Identify major muscles, blood vessels and nerves including fascial structures of clinical importance 3. Identify articular surfaces of major joints 4. Correlate features and normal functioning of joints	Cognitive Psychomotor	Level 1 (Remember / Recall)	5. MK 6. MK 7. NK 8. DK				
Hom UG-AN-6.16			K	Radiological anatomy of Lower extremity	2. Describe the normal appearance and relationship of bones and joints in a normal radiograph (X-ray) of the region	Cognitive	Level 1 (Remember / Recall)	1. MK				

Topic: Abdomen

Learning Outcomes (LO): At the end of Abdomen, I-BHMS student should be able to;

1. Describe the anatomy of the Abdominal and pelvic organs with their applied anatomy.

2. Identify the abdominal and pelvic organs in dissection.

3. Explain features of plain X-ray abdomen and pelvis.

4. Demonstrate surface projection of Abdominal and pelvic organs.

Sl. No.	Generic Competency	Subject Area	Millers: Knows (K) / Knows How (KH)/ Shows How (SH)/ Does (D)	Specific Competency	Specific learning Objectives: At the end of the session student should be able to	Bloom's Domain	Guilbert's level	Must know/ Desire to know/ Nice to know	Teaching Learning Method/ Media	Formative Assessment	Summative Assessment	Integration Horizontal/ Vertical
Hom UG-AN-7.1 to 7.6	Problem formulation/ Integration of Knowledge/ Information gathering/Practical Skills/ Information management/ synthesis	Upper Extremity	K	Osteology of Abdomen & Pelvis	1. Describe the general features of the lumbar vertebra, Sacrum & Pelvis 2. Describe the major attachments on sacrum 3. Mention clinically significant ossification features 4. Draw the surface marking of the major structures in the regions using surface landmarks	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK	Demonstration	Spotting/OSPE/Practical Performance	Practical/ Check list	Surgery (V)
Hom UG-AN-7.7 to 7.22			K	Dissection/ Demonstration	1. Describe the important surface land marks in the region 2. Identify the abdominal viscera and describe major surface & internal features 3. Identify pelvic viscera and describe their features and relations	Cognitive Psychomotor	Level 1 (Remember / Recall)	1. MK 2. MK 3. NK 4. DK				
Hom UG-AN-7.23			K	Radiological anatomy of Abdomen & Pelvis	1. Interpret a normal radiograph (X-ray) of the abdomen and pelvis in different commonly used views	Cognitive	Level 1 (Remember / Recall)	1. MK				

8. Practical Topics (Non-Lecture Activities)

Sl. No	Non-Lecture Teaching Learning methods	Time Allotted per Activity (in Hours)
9.	Seminars/ Workshops	10
10.	Group Discussions	10
11.	Problem based learning	10
12.	Integrated Teaching	15
13.	Case Based Learning	10
14.	Self-Directed Learning	15
15.	Tutorials, Assignments & projects	10
	Sub total	80
16.	Practical	250
	Total	**330**

9. ASSESSMENT

Assessment Summary - Number of papers and Mark Distribution

Sl. No.	Course Code	Papers	Theory	Practical	Viva Voce	Internal Assessment-Practical	Grand Total
1.	Hom UG-AN	2	200	100	80	20	400

Scheme of Assessment (formative and Summative)

Sl. No	Professional Course	1st term (1-6 Months)	2nd Term (7-12 Months)	3rd Term (13-18 Months)	
1.	First Professional BHMS	1st PA + 1ST TT	2nd PA+2ND TT	3rd PA	UE
		1st PA – 4th month 1st TT – 6th month	2nd PA – 9th month 2nd TT – 12th month	3rd PA - 14th month	17th month

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

Evaluation Methods for Assessment

Sl. No	Evaluation Criteria
1.	Theory, Practical, Viva voce Performance
2.	Theory: MCQs, SAQs and LAQs (MEQ - Modified Essay Questions/Structured Questions)

I. Theory Question Paper Layout

Paper-1 (100 marks) General Anatomy, Head, face and neck, Central nervous System, Upper extremities and Embryology.		
1.	**MCQ**	**10 marks**
2.	**SAQ**	**50 marks**
3.	**LAQ**	**40 marks**
Paper-2 (100 marks) Thorax, Abdomen, Pelvis, Lower extremities and Histology (micro anatomy).		
1.	**MCQ**	**10 marks**
2.	**SAQ**	**50 marks**
3.	**LAQ**	**40 marks**

I. Distribution of marks (Theory)

Paper-I						
Sl. No	**A**	**B**	**C**	**D**		
				Type of Questions and marks allotted "Yes" can be asked. "No" should not be asked.		
	List of Topics	**Term**	**Marks**	**MCQ** (1 Mark)	**SAQ** (5 Marks)	**LAQ** (10 Marks)
1.	General Anatomy	I	Refer Next Table	Yes	Yes	No
2.	Head, Neck & Face	II		Yes	Yes	Yes
3.	Central Nervous System	II		Yes	Yes	Yes
4.	Upper Extremities	I		Yes	Yes	Yes
5.	Embryology	I		Yes	Yes	No

Paper-II				
Sl. No	**A**	**B**	**C**	**D**
				Type of Questions and marks allotted "Yes" can be asked. "No" should not be asked.

	List of Topics	Term	Marks	MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1.	Thorax	II	Refer Next Table	Yes	Yes	Yes
2.	Abdomen, Pelvis & Perineum	III		Yes	Yes	Yes
3.	Lower Extremities	III		Yes	Yes	Yes
4.	Histology	I		Yes	Yes	No

Theme table

Paper-I

Theme*	Topics	Term	Marks	MCQ's	SAQ's	LAQ's
A	General Anatomy	I	10	Yes	Yes	No
B	Upper Extremities	I	25	Yes	Yes	Yes
C	Embryology	I	15	Yes	Yes	No
D	Head, Neck and Face	II	30	Yes	Yes	Yes
E	Central nervous System	II	20	Yes	Yes	Yes

Paper-II

Theme*	Topics	Term	Marks	MCQ's	SAQ's	LAQ's
A	Lower Extremities	III	30	Yes	Yes	Yes
B	Thorax	II	30	Yes	Yes	Yes
C	Abdomen, Pelvis & Perineum	III	30	Yes	Yes	Yes
D	Histology	I	10	Yes	Yes	No

Question paper Blue Print

Paper-I

A **Question Serial Number**	**B** **Type of Question**	**Question Paper Format** **(Refer table 4 F II Theme table for themes)**
Q1	Multiple choice Questions (MCQ) 10 Questions 1 mark each All compulsory Must know part: 7 MCQ	1. Theme A 2. Theme A 3. Theme B 4. Theme B 5. Theme C 6. Theme C 7. Theme D 8. Theme D 9. Theme E 10. Theme E

	Desirable to know: 2 MCQ. Nice to know: 1 MCQ	
Q2	Short answer Questions (SAQ) ten Questions 5 Marks Each All compulsory Must know part: 7 SAQ Desirable to know: 2 SAQ Nice to know: 1 SAQ	1. Theme A 2. Theme B 3. Theme B 4. Theme C 5. Theme C 6. Theme D 7. Theme D 8. Theme D 9. Theme E 10. Theme E
Q3	Long answer Questions (LAQ) four Questions 10 marks each All compulsory All questions on must know No Questions on Nice to know and Desirable to know	1. Theme B 2. Theme D 3. Theme D 4. Theme E

Paper-II

A **Question Serial Number**	**B** **Type of Question**	**Question Paper Format** **(Refer table II Theme table for themes)**
Q1	Multiple choice Questions (MCQ) 10 Questions 1 mark each All compulsory Must know part:7 MCQ Desirable to know: 2 MCQ. Nice to know: 1 MCQ	1. Theme A 2. Theme A 3. Theme A 4. Theme B 5. Theme B 6. Theme C 7. Theme C 8. Theme C 9. Theme D 10. Theme D
Q2	Short answer Questions (SAQ) ten Questions 5 Marks Each All compulsory Must know part: 7 SAQ Desirable to know: 2 SAQ	1. Theme A 2. Theme A 3. Theme A 4. Theme B 5. Theme B 6. Theme C 7. Theme C 8. Theme C 9. Theme D 10. Theme D

	Nice to know: 1 SAQ	
Q3	Long answer Questions (LAQ) four Questions 10 marks each All compulsory All questions on must know No Questions on Nice to know and Desirable to know	1. Theme A 2. Theme B 3. Theme C 4. Theme C

II. Scheme of Practical and Viva voce Examination and distribution of marks
(Practical 100 marks – Viva voce 80 marks + Internal assessment 20 marks: Total 200 marks)

Scheme of Practical Examination	
1. **Spotters: 4** (5 marks each) A. Histology Slide – 2 (5 marks each) a) Identification – 1 mark b) Draw and label – 2 marks c) Two identification features – 2 marks B. Radiology – 2 X-RAYS (5 marks each)	**20 marks**

a) Identification of X-Ray and its view – 1 mark b) Identification of features – 4 marks	
2. Osteology - Bones of Upper Extremity, Lower Extremity, Skull, Ribs and Vertebrae.	**20 marks**
3.Viscera - Organs from Thorax, Abdomen and CNS.	**20 marks**
4. Knowledge of dissected parts - Dissected Specimens of Upper and Lower Extremities.	**20 marks**
2. Surface marking	**10 marks**
3. Journal – Practical record of Anatomy including Histology and dissection card.	**10 marks**
Total	**100 Marks**

Viva voce Max. Marks - 80 + Internal assessment marks – 20	
Total marks	**100 marks**

9B - Scheme of Assessment (Formative)

Sr. No	Professional Course	1st term (1-6 Months)		2nd Term (7-12 Months)		3rd Term (13-18 Months)	
1	First Professional BHMS	1st PA	1ST TT	2nd PA	2ND TT	3rd PA	UE
		20 Marks Practical/Viva	100 Marks Practical/ Viva	20 Marks Practical/Viva	100 Marks Practical/ Viva	20 Marks Practical/Viva	

For Internal assessment, Only Practical/Viva marks will be considered. Theory marks will not be counted)

Method of Calculation of Internal Assessment Marks for Final University Examination:

PA1 Practical/Viva (20 Marks)	PA2 Practical/Viva (20 Marks)	PA3 Practical/Viva (20 Marks)	Periodical Assessment Average PA1+PA2+PA3/3	TT1 Practical/ Viva (100 Marks)	TT2 Practical/ Viva (100 Marks)	Terminal Test Average TT1+ TT2/ 200*20	Final Internal Assessment Marks
A	**B**	**C**	**D**	**E**	**F**	**G**	**D+G/2**

PA- Periodical Assessment**, TT-** Terminal Test**, UE**- University Examination

10. List of recommended books –

Standard Books

- Garg K, *B.D.Chaurasia's Human Anatomy Regional & Applied, Dissection & Clinical. Upper limb & Thorax*.
- Garg K, *B.D. Chaurasia's Human Anatomy Regional & Applied, Dissection & Clinical. Lower limb &Abdomen*
- Garg K, *B.D. Chaurasia's Human Anatomy Regional & Applied, Dissection & Clinical. Head, Neck &Brain.*
- Singh V. *General Anatomy*
- Singh V. *Anatomy of Head, Neck & Brain*
- Singh V. *Anatomy of Upper limb & Thorax*
- Singh V. *Anatomy of Abdomen & Lower limb*
- Singh V. *Anatomy of Clinical embryology*
- Garg K, Indira Bahl, Mohini Kaul. *Textbook of Histology*
- Halim A. *Surface and Radiological Anatomy*
- Khurana A, Khurana I, Garg K *B.D. Chaurasia's Dream Human Embryology*
- Loukas M, Benninger B, Tubbs R S. *Gray's Clinical Photographic Dissector of Human Body*
- Romanes G J. *Cunningham's Manual of Practical Anatomy. Upper & Lower limb*
- Romanes G J. *Cunningham's Manual of Practical Anatomy. Abdomen & Pelvis*
- Romanes G J. *Cunningham's Manual of Practical Anatomy. Head & Neck*

Reference books

- Eroschenko VP. *Di'fiore's Atlas of Histology with functional correlation*
- Gunasegaran JP. *Text book of Histology & Practical Guide*
- Hansen JT. *Netter's Atlas of Human Anatomy*. South Asian Ed
- Mescher AL. *Junqueria's Basic Histology Text & Atlas*
- Mortan DA, Peterson KD, Albretine K. H. *Gray's Dissection Guide for Human Anatomy*
- RomanesGJ.*Cunningham's Textbook of Anatomy*
- Ross &Wilson.*Anatomy and Physiology in Health and Illness*
- Singh, Inderbir. *Human Embryology*
- Sinnathamby CS. *Snell's Clinical Anatomy for Medical Students*.

- Standring Susan. *Gray's Anatomy The Anatomical Basis of Clinical Practice*
- Tortora GJ &Derrickson B. *Anatomy & Physiology*.

11. LIST OF CONTRIBUTORS

Dr E S J Prabhu Kiran, M D (Hom)

Principal, Professor & HOD, Department of Anatomy

Fr Muller Homoeopathic Medical College, Mangalore, Karnataka.

Dr. Vaishali Rahuldeep Khobragade
Professor & H.O.D. Department of Anatomy
Dr. D.Y. Patil Homoeopathic Medical College & Research Centre, Pune, Maharashtra.

Dr Bharat Panchal

HOD, Anatomy Dept. Smt Malini Kishore Sanghvi Homoeopathic Medical College Karjan, Gujarat.

Dr. Gautam Ash

Former HOD, Pratap Chandra Memorial HMC, Kolkata, West Bengal.

*****

COMPETENCY BASED DYNAMIC CURRICULUM FOR FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(Homoeopathic Materia Medica)

HOMOEOPATHY EDUCATION BOARD

NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058

Subject- Homoeopathic Materia Medica

Subject code: HomUG-HMM-I

INDEX

S.No	Description	Page Number
1	Preamble	02
2	Program Outcomes (PO)	03
3	Course Outcomes (CO)	04
4	Teaching Hours	05
5	Course Content	07
6	Teaching Learning Methods	10
7	Content Mapping (Competencies Table)	11
8	Assessment	25
9	List of Recommended Books	31
10	List of Contributors	32

1. PREAMBLE

Homoeopathic Materia Medica is the study of the action of drugs on healthy human being as a whole taking into consideration individual susceptibility and its reaction to various circumstances and time. A good prescription by a homoeopath mainly depends upon the case receiving, processing and a sound knowledge of Homoeopathic Materia Medica.

Each drug in Materia Medica not only has its own personality with its mental and physical constitution but also has its own affinity to an area, direction, spread, tissue, organ, system. Study of a drug in context of altered sensation, function and structure covers the pathology caused by it, which is also expressed in the pathogenesis of the drugs. Materia Medica also has symptoms from toxicological and clinical proving. All this knowledge is of utmost importance in order to apply the remedies in various clinical conditions. This can be achieved only by integrating the study of Materia Medica with other parallel subjects taught during the course.

Apart from the source books of Materia Medica there are different types of Materia Medica constructed on different philosophical backgrounds by different authors. Materia Medica also forms the platform of various repertories. Therefore, it becomes very important for a student of homoeopathy to learn the plan and construction of all the basic Materia Medica in order to understand their practical utility in practice.

It is also important to keep in mind that the end point of the teaching of HMM is not to burden the student with information of more number of remedies but to equip with an approach which will help to develop the vision towards self-guided study and apply the knowledge in practice.

This self-directed learning can ultimately lead to a critical approach of studying Materia Medica hence empowering evidence based practice and initiate the process of lifelong learning. Exploring Materia Medica is an endless journey as newer illnesses will keep on emerging and newer drugs or undiscovered facets of existing drugs will be needed to explore for managing these situations.

2. PROGRAM OUTCOMES:

At the end of BHMS program, a student must

1. Develop the competencies essential for primary health care in clinical diagnosis and treatment of diseases through the judicious application of homoeopathic principles

2. Recognize the scope and limitation of homoeopathy and to apply the Homoeopathic Principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community.

3. Discern the relevance of other systems of medical practice for rational use of cross referral and life saving measures, so as to address clinical emergences

4. Develop capacity for critical thinking and research aptitude as required for evidence based homoeopathic practice.

5. Demonstrate aptitude for lifelong learning and develop competencies as and when conditions of practice demand.

6. Be competent enough to practice homoeopathy as per the medical ethics and professionalism.

7. Develop the necessary communication skills to work as a team member in various healthcare setting and contribute towards the larger goals of national policies such as school health, community health, environmental conservation.

8. Identify and respect the socio-demographic, psychological, cultural, environmental & economic factors that affect health and disease and plan homoeopathic intervention to achieve the sustainable development Goal.

3. COURSE OUTCOMES

At the end of BHMS I course, the students should be able to-

1. Define the homoeopathic Materia Medica.
2. Understand the philosophy of homoeopathic Materia Medica.
3. Describe evolution, sources and construction of different types of Homoeopathic Materia Medica.
4. Enumerate the scope and limitations of Homoeopathic Materia Medica.
5. Evolve the portrait and symptomatology of a particular drug using the knowledge of pharmacy, psychology, anatomy, physiology and Organon of medicine.
6. Observe the symptoms of a particular medicine in a clinical set-up with emphasis on individualizing symptoms.

Learning Objectives

1. To define the homoeopathic Materia Medica and grasp the basic concept with philosophy of it based on Hahnemannian directions.
2. To discuss different sources and types of homoeopathic Materia Medica.
3. To understand the drug in context of its pharmacological data, constitution, temperament, sphere of action, pathogenesis, both mental and physical generals, particular symptoms, characteristic/ individualising symptoms, general and particular modalities, relationship with other remedies including doctrine of signature.
4. To study and understand the bio-chemic system of medicine.
5. To identify the symptoms of a sick individual corresponding to the symptoms of a particular drug.
6. To develop an insight into scopes and limitations of homoeopathic Materia Medica.

4. TEACHING HOURS

Distribution of Teaching Hours:

Homoeopathic Materia Medica		
Year	**Teaching hours- Lectures**	**Teaching hours- Non-lectures**
1st BHMS	120	75

4. A. Teaching Hours Theory:

S. no.	**List of Topics**	**Hours**
1.	Definition and introduction of Materia Medica	3
2.	Types of Homoeopathic Materia Medica	3
3.	Sources of Homoeopathic Materia Medica	4
4.	Study of drug picture (term I)	32
5.	Study of drug picture (term II)	33
6.	Theory of Bio chemic salts	2
7.	Individual bio chemic salts	14
8.	Study of drug picture (term III)	28
9.	Scope and Limitation of HMM	1
	Total	120

4.B. Teaching Hours Non-lecture:

Sr. No	**A** **Study Setting**	**B** **Term**	**C** **Teaching Hours**
1	OPD/IPD/Classroom	II & III	75

Non-Lecture Activities (Practical)-

Sr. No	**Non Lecture Teaching Learning methods**	**Time Allotted per Activity (Hours)**

1	Group Discussions	5
2	Problem based learning	5
3	Tutorials	10
4	Case Based Learning (live case)	55
	Total	**75**

5. COURSE CONTENTS BHMS I (Theory)

1. Introductory Lectures

a. Definition and introduction of basic Materia Medica. Contrast between Materia Medica and Homoeopathic Materia Medica.
b. Sources, types, construction,scope and limitation of Homoeopathic Materia Medica
c. Theory of biochemic system of medicine, its comparison with Homoeopathy and study of **12 biochemic tissue salts** with their physico-chemical reaction.

2. Homoeopathic medicines:

1. Aconite	18. CalcareaPhos	35. Hypericum
2. Aethusa Cynapium	19. Calendula	36. Ignatia
3. Allium Cepa	20. Carbo Veg	37. Ipecac
4. Aloe Soc	21. Chamomilla	38. Ledum Pal
5. Ammonium Carb	22. Cina	39. Lycopodium
6. Ammonium Mur	23. Cinchona	40. Natrum Carb
7. Antim Crude	24. Cocculus	41. Natrum Mur
8. Antim Tart	25. Coffea Cruda	42. Nux Vomica
9. Apis Mel	26. Colchicum	43. Podophyllum
10. Arnica Montana	27. Colocynth	44. Pulsatilla
11. Ars Alb	28. DioscoriaVillosa	45. Rhus Tox
12.Arum Triph	29. Croton Tig	46. Ruta
13. Baryta Carb	30. Drossera	47. Silicea
14. Belladona	31. Dulcamara	48. Spongia
15. Borax	32. Euphrasia	49. Sulphur
16. Bryonia Alba	33. Gelsemium	50. Symphytum
17. Calc Carb	34. HeparSulph	

3. Biochemic tissue salts:

1. Calc Flour	5. Kali Mur	9. Nat Mur*
2. Calc Phos*	6. Kali Phos	10. Nat Phos
3. Calc Sulph	7. Kali Sulph	11. Nat Sulph
4. FerrPhos	8. Mag Phos	12.Silicea*

**Also included in the list of Homoeopathic medicines, hence total no. of medicines shall remain 59 for BHMS I.*

Contents for Term I:

I. Introductory Lectures

a. Definition and introduction of basic Materia Medica, contrast between Materia Medica and Homoeopathic Materia Medica
b. Sources, types and construction of Homoeopathic Materia Medica

II. Homoeopathic medicines:

1. Arnica montana	8.Natrum Mur
2.Bryonia	9.Rhus tox
3.Baryta carb	10.Ruta
4.Calc Carb	11.Silicea
5.Calendula	12.Sulphur
6.Hypericum	13.Symphytum
7. Ledum pal	

Contents for Term II:

I. Homoeopathic medicines:

1. Aconite nap	11.Colchicum
2.Aloes soc	12. Colocynth
3. Apis mellifica	13.Dioscorea
4. Arsenic Alb	14. Dulcamara
5.Belladona	15. Gelsemium
6.Cina	16. Ignatia
7.Chamomila	17. Lycopodium
8.Carbo veg	18. Nux vomica
9.Cinchona	19. Podophyllum

10.Cocculus	20. Pulsatilla nig.

II. Theory of biochemic system of medicine, its comparison with Homoeopathy

III. Study of 5 **biochemic tissue salts** with their physico-chemical reaction:

1. Calc Flour
2. Calc Phos
3. Calc Sulph
4. Natrum Phos
5.Natrum sulph

Contents for Term III:

I. Homoeopathic medicines:

1. Aethusa cyn	9. Coffea cruda
2. Alliun cepa	10. Croton tig
3. Ammon Carb	11. Drosera
4. Ammon Mur	12. Euphrasia
5. Antim Crud	13.Hephar Sulph
6. Antim Tart	14.Ipecacuanha
7. Arum triph	15.Natrum carb
8. Borax	16.Spongia

II. Study of 5 **biochemic tissue salts** with their physico-chemical reaction:

1. FerrPhos
2. Kali Mur
3. Kali Phos
4. Kali Sulph
5. Mag Phos

III. Scope and limitations of Homoeopathic Materia medica

6. TEACHING LEARNING METHODS

Lectures (Theory)	**Non-lectures (Practical)**
Lectures	Clinical demonstration
Small group discussion	Problem based discussion
Integrated lectures	Case Study
Assignments	
Library reference	

Different teaching-learning methods must be apply for understanding holistic and integrated Materia Medica. There has to be classroom lectures, small group discussions, case discussion where case based learning (CBL) and problem based learning (PBL) are specially helpful. In the applied Materia Medica, case discussion (CBL-PBL) method is beneficial for students. Audio visual (AV) methods for classroom teaching may be an innovative aid in order to demonstrate the related graphics and animations etc. In case of clinical demonstration – DOAP (Demonstration – Observation – Assistance – Performance) is very well applicable.

7. CONTENT MAPPING (COMPETENCIES TABLE)

Topic 1- Definition and introduction of Materia Medica

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/ Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-1.1	Information Gathering Integration of information	Definition and introduction of materia medica	Knows	Knowledge of fundamentals of HMM	Define the basic MM and HMM	Cognitive	Remember/ recall Understand	Must Know	Lecture	MCQ, SAQ, Viva Voce	SAQ, Viva voce	Horizontal Integration with Organon of Medicine
HomUG-HMM-I-1.2					Explain what sign and symptoms are with examples							
HomUG-HMM-I-1.3					Contrast between MM and HMM							
HomUG-HMM-I-1.4					Discuss the history of MM with emphasis on Hahnemannian directions							

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/ Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral

Topic 2- Types of Materia Medica

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/ Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-2.1	Information Gathering Integration of information	Types of Materia Medica	Knows	Identify various types of HMM	Describe various types of HMM	Cognitive	Remember/ recall Understand	Must Know	Lecture, small group discussion, demonstration	MCQ, SAQ, Viva Voce	SAQ, Viva voce	Horizontal Integration with Organon of Medicine and Pharmacy
HomUG-HMM-I-2.2					Enumerate types of HMM							
HomUG-HMM-I-2.3					Classify Homoeopathic Materia Medica as per its types.							
HomUG-HMM-I-2.4			Knows how		Discuss the characteristics of each type of HMM based on practical utility.			Desirable to know				

Topic 3- Sources of Homoeopathic Materia Medica

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments - Horizontal/ Vertical/ Spiral
HomUG-HMM-I-3.1	Information Gathering Integration of information	Sources of HMM	Knows	Identify various sources of HMM	Describe the sources of HMM	Cognitive	Remember / recall Understand	Must know	Lecture, Small Group discussion, Demonstration	MCQ, SAQ, Viva Voce	SAQ, LAQ, Viva voce	Horizontal Integration with Organon of Medicine, Homoeopathic pharmacy Vertical and spiral integration with FMT
HomUG-HMM-I-3.2					Understand the concept of source books of HMM							
HomUG-HMM-I-3.3					List the source books of HMM							
HomUG-HMM-I-3.4					Discuss the plans and construction of source							

					books of HMM							

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments - Horizontal/ Vertical/ Spiral
HomUG-HMM-I-3.5	Information Gathering Integration of information	Sources of HMM	Knows	Identify various sources of HMM	Enumerate different types of proving as sources of HMM	Cognitive	Remember / recall Understand	Must know	Lecture, Small Group discussion, Demonstration	MCQ, SAQ, Viva Voce	SAQ, LAQ, Viva voce	Horizontal Integration with Organon of Medicine, Homoeopathic pharmacy Vertical and spiral integration with FMT
HomUG-HMM-I-3.6			Knows how		Describe various proving sources of HMM							
HomUG-HMM-I-3.7					Understand the basic concept of various types proving as source of HMM							
HomUG-HMM-I-3.8				Insight into structure of various HMM	Differentiate the construction of different			Desirable to know			SAQ, Viva voce	

					source books of HMM							

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments - Horizontal/ Vertical/ Spiral
HomUG-HMM-I-3.9	Information Gathering Integration of information	Sources of HMM	Knows how	Identify various sources of HMM	Understand the construction of various HMM as a compilation based on the source books.	Cognitive	Remember / recall Understand	Nice to know	Lecture, Small Group discussion, Demonstration	Viva voce	Viva voce	Horizontal Integration with Organon of Medicine, Homoeopathic pharmacy
HomUG-HMM-I-3.10					Draw the time line of Homoeopathic Materia Medica based on their							

					history, evolution and philosophy							

Topic 4- Homoeopathic Medicines

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-4.1	Information Gathering Integration of information Problem formulation Practical Skills	Homoeopathic medicines included in: Term I, II and III	Knows, Knows how, Shows how	1.Evolve the symptom-tology of a particular drug 2. Observe the symptoms of a particular medicine in a clinical set-up	Describe the drug picture of homoeopathic medicines with following details- pharmacological data, constitution, temperament, sphere of action, doctrine of signature, pathogenesis, both mental and physical generals, particular symptoms, characteristic/ individualizing symptoms, general and particular modalities, relationship	Cognitive, Psychomotor	Remember/ recall Understand Interpret	Must Know	Lecture, Small Group discussion, Demonstration (clinical classes in OPD), Problem based learning	MCQ, SAQ, LAQ, Practical, Viva Voce	SAQ, LAQ, Practical, Viva voce	Horizontal Integration with pharmacy, psychology, anatomy, physiology and organon of medicine. Longitudinal and spiral with all allied subjects in BHMS

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-4.2	Information Gathering Integration of information Problem formulation Practical Skills	Homoeopathic medicines included in: Term I, II and III	Knows, Knows how, Shows how	1.Evolve the symptom-tology of a particular drug 2. Observe the symptoms of a particular medicine in a clinical set-up	.Formulate the drug picture/ symptomatology of a particular drug using the knowledge of pharmacy, psychology, anatomy, physiology and organon of medicine.	Cognitive, Psychomotor	Remember/ recall Understand Interpret	Must Know	Lecture, Small Group discussion, Demonstration (clinical classes in OPD), Problem based learning	MCQ, SAQ, LAQ, Practical, Viva Voce	SAQ, LAQ, Practical, Viva voce	Horizontal Integration with pharmacy, psychology, anatomy, physiology and organon of medicine. Longitudinal and spiral with all allied subjects in BHMS
HomUG-HMM-I-4.3					Understand the symptomatology of a particular medicine in regard to a particular system/organ of the body.							

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-4.4	Information Gathering Integration of information Problem formulation Practical Skills	Homoeopathic medicines included in: Term I, II and III	Knows, Knows how, Shows how	Evolve the symptom-tology of a particular drug	Identify the symptom similarity of a patient with a particular medicine in a clinical set up	Cognitive, Psychomotor	Remember/ recall Understand Interpret	Must Know	Lecture, Small Group discussion, Demonstration (clinical classes in OPD), Problem based learning	MCQ, SAQ, LAQ, Practical, Viva Voce	SAQ, LAQ, Practical, Viva voce	Horizontal Integration with pharmacy, psychology, anatomy, physiology and organon of medicine. Longitudinal and spiral with all allied subjects in BHMS
HomUG-HMM-I-4.5					State the relationship of a medicine with other medicines							
HomUG-HMM-I-4.6			Knows how	Observe the symptoms of a particular medicine in a clinical set-up	Understand the relationship status of a medicine and its background	Cognitive	Remember/ recall Understand	Desirable to know	Lecture, Small Group discussion,	MCQ, Viva Voce	Viva voce	
HomUG-HMM-I-4.7			Knows how		Observe the variations in symptomatology of a particular medicine in most commonly used HMM of	Cognitive	Remember/ recall Understand	Nice to know	Lecture, Small Group discussion, Demonstration	Viva Voce	Viva voce	

					eminent authors							

Topic 5- Theory of Bio chemic tissue salts, its comparison with homoeopathy and study of 12 tissue remedies with their physico-chemical reaction:

Sr.No.	**Generic Competency**	**Subject Area**	**Millers Level:** **Does/Shows how/ Knows how/ Knows**	**Specific Competency**	**SLO/ Outcome**	**Blooms Domain**	**Guilbert's Level**	**Must Know/ Desirable to know/ nice to know**	**T-L Methods**	**Formative Assessment**	**Summative Assessment**	**Integration Departments- Horizontal/ Vertical/ Spiral**
HomUG-HMM-I-5.1	Information Gathering, synthesis and application of knowledge in class room	Theory of Bio chemic tissue salts	Knows	Describe the Theory of Bio chemic tissue salts	Describe the Theory of Bio chemic tissue salts	Cognitive	Remember/ recall Understand	Must Know	Lecture, Small Group discussion	MCQ. Viva, Quiz Assignment	SAQ, MCQ	**Horizontal** Pharmacy, Biochemistry and Physiology **Spiral** Can compare the drug pathogenesis with
HomUG-HMM-I-5.2					compare and contrast Homoeopathic system of medicine with Bio chemic tissue salts							

Sr.No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-5.3					co-relate the importance of knowledge of Biochemistry in better understanding of Bio chemic tissue salts							Homoeopathic medicines **Vertical** Can explore the utility of Biochemic salts in treating deficiencies in Medicine, OBG etc
HomUG-HMM-I-5.4					List the 12 Bio chemic tissue salts							

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments - Horizontal/ Vertical/ Spiral
HomUG-HMM-I-5.5	Information Gathering Integration of information Problem formulation Practical Skills	12 Biochemic medicines included in: Term II and III	Knows, Knows how, Shows how	1.Describe individual Biochemic tissue salts 2.Evolve the symptom-tology of a particular drug 3.Observe the symptoms of a particular medicine in a clinical set-up	*In addition to the competencies for homoeopathic medicines,* Describe individual Bio chemic tissue salts	Cognitive, Psychomotor	Remember / recall Understand Interpret	Must Know	Lecture, Small Group discussion, Demonstration (clinical classes in OPD), Problem based learning	MCQ, SAQ, LAQ, Practical, Viva Voce	SAQ, LAQ, Practical, Viva voce	Horizontal Integration with pharmacy, psychology, anatomy, physiology and organon of medicine. Longitudinal and spiral with all allied subjects in BHMS
HomUG-HMM-I-5.6					Explain the pathogenesis and symptomology of each Bio chemic tissue salts as per Dr, Wilhelm H. Schuessler.							

HomUG-HMM-I-5.7					Justify the portrait of each tissue salt in correlation with the knowledge of Biochemistry.							

Topic 6- Scope and limitation of homoeopathic Materia Medica:

Sr. No.	Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
HomUG-HMM-I-6.1	Information Gathering Integration of information	Scope and Limitations of HMM	Knows	Must be able to comprehend the scope and limitations of Homoeopathic Materia Medica	List the scope and limitations of HMM	Cognitive	Remember/ recall	Must Know	Lecture. Small group discussion Case Based learning Problem Based Learning	LAQ SAQ Viva,	LAQ SAQ Viva,	Horizontal Integration with pharmacy, psychology, anatomy, physiology and organon of medicine. Longitudinal and spiral with all allied
HomUG-HMM-I-6.2			Knows how		Discuss the scope and limitations of HMM		Understand	Must Know				
HomUG-HMM-I-6.3			Knows		Discuss the solutions		Understand	Nice to know				

					to overcome the limitations of HMM							subjects in BHMS

8. ASSESSMENT

Assessment Summary

8A- Number of papers and Mark Distribution

Sr. No.	Course Code	Papers	Theory	Practical (Assignment+ Spotting)	Viva Voce	Internal Assessment- Practical*	Grand Total
1	HomUG-HMM-I	1	100	20+10= 30	60	10	200

*Note- *For Internal assessment, only Viva marks obtained in three PAs and two TTs will be considered as explained in table 8B-1 and to be calculated as per the table 8B-2 given below. Theory marks shall not be taken into account for this purpose.*

8B-I - Scheme of Assessment (formative and Summative)

Sr. No	**Professional Course**	**1st term (1-6 Months)**			**2nd Term (7-12 Months)**			**3rd Term (13-18 Months)**	
1	**First Professional BHMS**	First PA + 1ST TT			2nd PA+2ND TT			3rd PA+UE	
		1st PA	1st TT		2nd PA	2nd TT		3rd PA	UE
		10 marks practical/viva	50 marks theory	50 marks viva	10 marks practical/viva	50 marks theory	50 marks viva	10 marks practical/viva	As per table 8A

PA: Periodical Assessment to be done only through practical/viva; TT: Term Test shall include both theory and viva; UE: University Examinations shall include both theory and viva as per table 8A

8B-II- Method of calculation of internal assessment marks for final university examination:

PA1 Practical/Viva (10 Marks)	**PA2 Practical/Viva (10 Marks)**	**PA3 Practical/Viva (10 Marks)**	**Periodical Assessment Average PA1+PA2+PA3/3**	**TT1 Practical/ Viva (50 Marks)**	**TT2 Practical/ Viva (50 Marks)**	**Terminal Test Average TT1+ TT2/10**	**Final Internal Assessment Marks**
A	**B**	**C**	**D= A+B+C/3**	**E**	**F**	**G=E+F/10**	**D+G/2**

8C - Paper Layout

Summative assessment:
Theory- 100 marks

MCQ	**10 marks**
SAQ	**50 marks**
LAQ	**40 marks**

8 D– I - Distribution of Theory exam

Sr. No	Paper			D Type of Questions "Yes" can be asked. "No" should not be asked.		
	A List of Topics	B Term	C Marks	MCQ (1 Mark)	SAQ (5 Marks)	LAQ (10 Marks)
1	Definition and introduction of basic materia medica and HMM; compare HMM and other Materia Medica	I	Refer Next Table	Yes	Yes	No
2	Sources, types, construction, scope and limitation of Homoeopathic Materia Medica	I,III		Yes	Yes	Yes
3	Theory of Biochemic system of medicine, its comparison with Homoeopathy and study of **12 Biochemic tissue salts** with their physico-chemical reaction	II		Yes	Yes	Yes
4	Drug Picture- 50 Homoeopathic Medicines	II & III		Yes	Yes	Yes

8D– II - Theme table

Theme*	Topics	Term	Marks	MCQ's	SAQ's	LAQ's
A	Definition and introduction of basic materia medica and HMM; compare HMM and other Materia Medica	I	7	Yes	Yes	No
B	Sources, types, construction, scope and limitation of Homoeopathic Materia Medica	I,III	17	Yes	Yes	Yes
C	Theory of Biochemic system of medicine, its comparision with Homoeopathy and study of **12 Biochemic tissue salts** with their physico-chemical reaction	II & III	22	Yes	Yes	Yes
D	Drug Picture- 50 Homoeopathic Medicines	I,II& III	54	Yes	Yes	Yes

8E- Question paper Blue print

Question Serial Number	Type of Question	Question Paper Format (Refer table 8D- II Theme table for themes)
Q1	Multiple choice Questions (MCQ) 10 Questions 1 mark each All compulsory Must know part: 7 MCQ Desirable to know: 2 MCQ. Nice to know: 1 MCQ	1. Theme A 2. Theme A 3. Theme B 4. Theme B 5. Theme C 6. Theme C 7. Theme D 8. Theme D 9. Theme D 10. Theme D

Q2	Short answer Questions (SAQ) ten Questions 5 Marks Each All compulsory Must know part: 7 SAQ Desirable to know: 2 SAQ Nice to know: 1 SAQ	1. Theme A 2. Theme B 3. Theme C 4. Theme C 5. Theme D 6. Theme D 7. Theme D 8. Theme D 9. Theme D 10. Theme D
Q3	Long answer Questions (LAQ) Four Questions 10 marks each All compulsory All questions on must know No Questions on Nice to know and Desirable to know	1. Theme B 2. Theme C 3. Theme D 4. Theme D

8F - Distribution of Practical Exam

Practical & Viva-100 marks

Viva voce	60 marks
Practical (Assignment)*	20 marks
Practical (Spotting)	10 marks
Internal assessment**	10 marks (viva/ clinical assessment)

*Assignment shall comprise of compilation of complete drug-portrait of 6 polychrest remedies and 4 biochemic salts

** Method of calculation explained in table no. 8B-II

9. LIST OF RECOMMENDED REFERENCE BOOKS:

- Allen HC, 2005, Keynotes Rearranged and Classified with Leading Remedies of the Materia Medica and Bowel Nosodes, Reprint edition, B.Jain Publishers, New Delhi
- Choudhuri NM, 2006, A Study On Materia Medica Enriched with real case studies, Reprint revised edn, B.Jain Publishers, New Delhi
- Kent JT, 2015, Lectures On Homoeopathic Materia Medica, Reprint edn, B.Jain Publishers, New Delhi
- Burt W, 2009, Physiological Materia Medica, Third edn, B.Jain Publishers, New Delhi
- Boericke W, Dewey W, 2016, The Twelve Tissue Remedies By Schessler, Reprint edn, B.Jain Publishers, New Delhi
- All source books may be referred whenever required.

10. LIST OF CONTRIBUTORS

I. **Dr Vijaykrishna V**
MD (Hom)
Reader and PG guide Department of HMM
Government Homoeopathic Medical college, Bangalore
RGUHS Karnataka.

II. **Dr.Vanija Sharma**
M. D. (Hom.), Ph.D. (Hom.)
Associate professor and HOD Materia Medica,
Dr. MPK Homoeopathic medical college,
A constituent college of Homoeopathy University, Jaipur, Rajasthan.

COMPETENCY BASED DYNAMIC CURRICULUM FOR

FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(Homoeopathic Pharmacy)

HOMOEOPATHY EDUCATION BOARD

NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058

Course-Homoeopathic Pharmacy

Course code: Hom-UG-HP

INDEX

Sr. No	Description	Page Number
1	Preamble	02
2	Program Outcomes (PO)	03
3	Course Outcomes (CO)	04
4	Teaching Hours	05
5	Course Content	13
6	Teaching Learning Methods	21
7	Content Mapping (Competencies Table)	22
8	Practical Topics	107
9	Assessment	110
10	List of Recommended Books	115
11	List of Contributors	122

1. PREAMBLE

Pharmacy holds a unique place in Homoeopathic practice and education. It involves knowledge of sources of drugs and the process through which these are processed to obtain dynamic, potent homoeopathic drugs for use at the bedside. It encompasses knowledge of drug action, drug proving, methods of Quality testing, standardization & storage with up todate information of changing drug laws related to Homoeopathic Pharmaceutical Industry & Homoeopathy.

We all know the travails which Master went through while establishing the right to manufacture and dispense what he had so painfully discovered. The challenges have not lessened in the modern era when 'scientific' evidence has been gathered for dubbing Homoeopathic medicines as nothing more than a placebo. It is important that the entrant to our science is introduced to the scientific nature of the process employed to prepare our medicines and he develops confidence in the soundness of the practices as well as its efficacy. The student should also appreciate the more than 250 year advance that Hahnemann was able to establish of Homoeopathic science. We now know that Homoeopathy is the 'greenest' of all medical systems in existence and that is sustainable, eco-friendly and the most economic while being effective over a wide range of conditions.

The way that this can be conveyed is by adopting an integrated approach to Pharmacy education and training. Effective linkages with the subjects of Homoeopathic Philosophy and Materia Medica will be able to convey the strong roots that the practice of Pharmacy has not only in the philosophical approach but also the experimental results as seen through the proving from which the world of Materia Medica has evolved.

Simultaneously, the recent advances in the bio-physical and quantum physics has opened new avenues to address the age-old question of how homoeopathic medicines act. A host of researchers are already doing work which the student needs to be made conversant with. That will produce an insight of the way new researches and developments in related fields of the 21st century are able to start explaining Hahnemann's insights of the 18th! This will also firmly root the student in the first year itself to being a participant in ongoing research related to the discipline which will be his own. Hence the teacher of Pharmacy has a crucial role to play in being abreast of the developments in the field and lend to the student the excitement that becomes a part of teaching-learning.

2. PROGRAMME OUTCOMES

At the end of BHMS program, a student must

1)Develop the knowledge, skills, abilities and confidence as a primary care homoeopathic practitioner to attend to the health needs of the community in a holistic manner

2) Correctly assess and clinically diagnose common clinical conditions prevalent in the community from time to time

3) Identify and incorporate the socio-demographic, psychological, cultural, environmental & economic factors affecting health and disease in clinical work

4) Recognize the scope and limitation of homoeopathy in order to apply Homoeopathic principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community

5) Be willing and able to practice homoeopathy as per medical ethics and professionalism.

6) Discern the scope and relevance of other systems of medical practice for rational use of cross referrals and role of life saving measures to address clinical emergencies

7) Develop the capacity for critical thinking, self reflection and a research orientation as required for developing evidence based homoeopathic practice.

8) Develop an aptitude for lifelong learning to be able to meet the changing demands of clinical practice

9) Develop the necessary communication skills and enabling attitudes to work as a responsible team member in various healthcare settings and contribute towards the larger goals of national health policies such as school health, community health and environmental conservation.

3.COURSE OUTCOMES

At the end of the course of Homoeopathic Pharmacy, I BHMS Student will be able to

1. Explain the principles that govern homoeopathic pharmacy.
2. Discuss the pharmacognosicalbasis of homoeopathic drugs with respect to their identification, nomenclature, source, part used, method of collection and preparation.
3. Prepare homoeopathic medicines from their respective sources according to the different scales & methods of potentisation on a small scale in the laboratory.
4. Describe the pharmacology of homoeopathic drugs with respect to the types of drug action, sphere of action and pharmacological action of homoeopathic drugs integrated with Homoeopathic Materia Medica, Anatomy and physiology.
5. Relate the methodology of Homoeopathic Drug Proving integrated with Organon of Medicine.
6. Apply the principles of Homoeopathic Posology in different health care setting like OPD/IPD integrated with Organon of Medicine and Homoeopathic Materia Medica.
7. State the methods of standardization and quality control of homoeopathic medicines to ensure the genuineness of homoeopathic medicines.
8. Explain the principles of pharmaconomy, dispensing and preservation of homoeopathic medicines.
9. Engage the principles of pharmaco-vigilance, and adverse drug reaction in relation to homoeopathic medicines.
10. Write an ideal prescription.
11. Evaluate the scope for research in homoeopathic pharmacy in the context of the recent advancements in pharmaceutical sciences

1. TEACHING HOURS

Sr No.	Subject	Theoretical Lecture	Practical + Posting at IPD/OPD/Hospital Dispensing Section
01	Homeopathic Pharmacy	100 hrs.	110 hrs.

Teaching Hours (Theory)

A. List of Topics		**B.Term**	**C.Teaching Hours**
a) General Concepts and Orientation:			
History of Pharmacy with emphasis on emergence of Homoeopathic Pharmacy.	Definition of Pharmacy & Homoeopathic Pharmacy Concept of Drug substance, Drug, Medicine & Remedy Forming Basic concept of other AYUSH Schools of Pharmacy (Ayurveda, Siddha, Sowa Rigpa& Unani Pharmacy)	I	03
Homoeopathic Pharmacy Basics	Sources of Homoeopathic Pharmacy Branches of Pharmacy Scope of Homoeopathic Pharmacy Specialty and originality of Homoeopathic Pharmacy The Principles of Homoeopathy	I	04

	Law of Similia, Simplex & Minimum Theory of Chronic Disease & Vital Force Doctrine of Drug Proving & Drug Dynamisation		
Homoeopathic Pharmacopoeia	The Evolution, History & Development of Homoeopathic Pharmacopoeias throughout the world (year wise Publications) – GHP, BHP, HPUS, FHP Official –(HPI) &Unofficial Pharmacopoeias – (M Bhattacharya & Co's Homoeopathic Pharmacopoeia Encyclopaedia of Homoeopathic Pharmacopoeia – P N Verma, Homoeopathic Pharmaceutical Codex) Monograph, Contents of Monograph with its individual importance	I	04
Ideal laboratory	Pre requisites of ideal Laboratory (General Laboratory), Laboratory safety Rules Role of Laboratory in Homoeopathic Pharmacy Education	I	02
Weights and measurements.	Metrology Basics & Units of Apothecary System, British Imperial System, Metric System Interrelationship between various systems of Weight & Measure Concept on Domestic Measures with Metric Equivalents	I	01

Nomenclature	The Basic Rules of Nomenclature Nomenclature of Homoeopathic Drugs Important terminologies like scientific names, common names, synonyms Anomalies in Nomenclature	I	02
Pioneers of Homoeopathic Pharmacy	Role & contributions of Pioneers in development of Homoeopathic Pharmacy	I	02
b) Raw Material: Drugs and Vehicles			
Source of drugs in Homoeopathy	Different sources - Plant kingdom, Animal kingdom, Mineral kingdom, Nosodes, Sarcodes, Imponderabilia, Synthetic source, New Sources - Allersode, Isodes with reference to their clinical utility Introduction to Bowel Nosodes, Tissue remedies	I	07
Collection of drug substances	General and Specific guidelines for collecting drugs from all available sources	I	03
Vehicles.	Definition, classification, General Use Source, Properties & Particular use of Vehicles with respect to List Provided in Appendix D Preparation – Commercial Lactose, Alcohol Purity tests – Water, Alcohol, Sugar of Milk	I	06
c) Homoeopathic Pharmaceutics:			

Mother tincture and its preparation	Extraction – Principles & Various Methods Old Method (Based on Class I to IX) Concept of Uniform Drug Strength Estimation of Moisture Content - Necessity New Method/Modern Approach of Homoeopathic Drug Preparation	II	07
Various Scales of Potentization in Homoeopathic pharmacy.	History of development, Introducer, Designation, Preparation, Administration & Application with respect to - Centesimal Scale, Decimal Scale & 50 Millesimal Scale	II	03
Drugs Dynamisation	The Evolution of Dynamisation Concept in Homoeopathy Potentisation & its types The Merits of Potentisation Succussion & Trituration Various types of Potency– Fluxion Potency, Jumping Potency, Back Potency, Single Vial Potency, Multiple Vial Potency, Mixed Vial Potency Post-Hahnemannian Potentization Techniques	II	06
External applications	Scope of administration of External Applications in Homoeopathic Practice Dr Hahnemann's View as per Organon (5^{th}& 6^{th} Ed)	II	05

	Preparation & Uses of lotion, glycerol, liniment and ointment. Commercial Preparation of Ointment		
Posology	Basic principles of Homoeopathic Posology Related aphorisms of Organon of medicine. Criteria for Selection of Potency & Repetition of Dose Various Kinds of Dose, Emphasis on Minimum Dose	III	06
Prescription	Prescription Writing Important Abbreviations Parts & Contents of Prescription Merits & Demerits of Prescription Writing	III	02
Dispensing of Homoeopathic Medicines	Various Dosage Forms – Solid, Liquid Dosage Forms, Methods of Dispensing	II	02
Placebo.	Concept of Homoeopathic Placebo The Philosophy of administration of placebo Concept of Placebo Effect	II	01
Pharmaconomy	Routes of Homoeopathic drug administration.	II	02
Preservation	Preservation Rules – Raw Materials Drug Substance, Mother Preparations, Finished products & Vehicles	II	02

d) Pharmacodynamics			
▪ Doctrine of Signature.	Basic Concept, Its Evolution & Application in Ancient Medical System Supporters of the Doctrine Dr Hahnemann's view on the Doctrine	II	01
▪ Drug Proving.	Homoeopathic Pharmacodynamics With reference to aphorisms 105 – 145 of Organon of Medicine – 6th Ed) Post Hahnemannian Drug Proving Homoeopathic Pathogenetic Trial (HPT) CCRH & Other Protocols on HPT Other Noted Provers & their work on Drug Proving	III	06
▪ Adverse Drug Reactions	Basic Idea, Reporting of ADE Drug safety with Ref to HPI Medication errors, Causality Assessment Incompatible Remedies	II	02
▪ Pharmaco-vigilance.	Pharmacovigilance in Homoeopathy Activities of Pharmacovigilance Centres Awareness on Medicinal Preparations against Homoeopathic Principles – Patents, Combinations	II	02

▪ Pharmacological study of drugs	listed in Appendix-A (Any 15)	III	05
e) Quality Control:			
• Standardisation in Homoeopathy	Different Methods of Standardisation Quality Control of Raw Materials – Various Evaluation techniques In Process Quality Control Quality Control of finished products – Various standard parameters	II	02
• Industrial pharmacy.	Good Manufacturing Practices (GMP) Schedule M1	II	02
• Homoeopathic pharmacopoeia laboratory (HPL)	Functions and Activities of HPL relating to quality control of drugs. Pharmacopoeia Commission for Indian Medicines	II	01
f) Legislations pertaining to Homoeopathic Pharmacy:		**III**	**04**
The Drugs and Cosmetics Act, 1940 (23 to 1940)			
Drugs and Cosmetics Rules, 1945			
Medicinal and Toilet Preparations (Excise Duties) Act, 1955 (16 of 1955)			
Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 (21 of 1954)			
The Narcotic Drugs and Psychotropic Substances Act, 1985 (61 of 1985)			
Dangerous Drug Act, 1930			

g) Recent Advances in Homoeopathic Pharmacy	**III**	**02**
Modern theories related with Homoeopathic Drug action ▪ Principles of Drug action ▪ Introduction to Nanomedicine ▪ Molecular Mechanism of Drug Action ▪ Mechanism of Action of Homoeopathic Medicines		
Scope of Research in Homoeopathic Pharmacy ▪ Drug Discovery ▪ Principles of New Drug discovery ▪ Clinical evaluation of New Drugs ▪ Pre-Clinical Research in Homoeopathic Pharmacy	III	01
h) Homoeopathic Pharmacy - Relationships	III	02
Relation of Homoeopathic Pharmacy with Anatomy		
Relation of Homoeopathic Pharmacy with Physiology		
Relation of Homoeopathic Pharmacy with Materia Medica With reference to Source of Drugs, Identification, Common Name of Drugs, Role of Drug Proving & Other Types of Proving in construction of Materia Medica, Clinical Verification Family wise study of Sphere of action – Solanaceae, Loganiaceae, Compositae, Liliaceae, Anacardiaceae, Rubiaceae etc		

Teaching Hours (Practical)

Homoeopathic Pharmacy Practicals		Teaching Hours	Peyton's 4 step assessment criteria
	Particulars of Experiments		
1	Estimation of size of globules	2	Execution
2	Medication of globules (Small Scale)	2	Execution
3	Purity test of Sugar of milk	2	Comprehension & Execution
4	Purity test of water	2	Comprehension & Execution
5	Purity test of Ethyl alcohol	2	Comprehension & Execution
6	Determination of Specific gravity of a given liquid Vehicle & identifying the same.	2	Execution
7	Preparation of dispensing alcohol from strong alcohol.	1	Comprehension & Execution
8	Preparation of dilute alcohol from strong alcohol.	1	Comprehension & Execution
9	Trituration of drug in Old Method (One each of Class VII, VIII & IX)	3	Execution
10	Trituration of one drug as per HPI	1	Execution
11	Succussion in decimal scale from Mother Tincture (Prepared in Old Method) to 3X potency.	2	Execution
12	Succussion in decimal scale from Mother Tincture (Prepared in New Method) to 3X potency	2	Execution
13	Succussion in centesimal scale from Mother Tincture (Prepared in Old Method) to 3C	2	Execution
14	Succussion in centesimal scale from Mother Tincture (Prepared in New Method) to 3C	2	Execution
15	Conversion of Trituration to liquid potency: Decimal scale 6X to 8X potency.	1	Execution
16	Conversion of Trituration to liquid potency: Centesimal scale 3C to 4C potency.	1	Execution

17	Preparation of 0/2 potency (Solid form) (LM scale) of 1 Drug from 3rd Degree Trituration.	2	Execution
18	Preparation of external applications – Lotion	1	Execution
19	Preparation of external applications – Glycerol	1	Execution
20	Preparation of external applications – Liniment	1	Execution
21	Preparation of external applications – Ointment	1	Execution
22	Writing of prescription & Dispensing the Medicine in Water with preparation of Doses	1	Execution
23	Writing of prescription & Dispensing the Medicine in Sugar of Milk with Preparation of Doses	1	Execution
24	Preparation of mother tinctures according to Old Hahnemannian method (Class I, II, III, IV)	8	Execution
25	Preparation of mother solutions according to Old Hahnemannian method (Class Va, Vb, VIa, VIb)	4	Execution

5. **COURSE CONTENT**

A. THEORY

Table 4: Homoeopathic Pharmacy Theory	
a) General Concepts and Orientation:	
History of Pharmacy with emphasis on emergence of Homoeopathic Pharmacy.	Definition of Pharmacy & Homoeopathic Pharmacy Concept of Drug substance, Drug, Medicine & Remedy Forming Basic concept of other AYUSH Schools of Pharmacy (Ayurveda, Siddha, Sowa Rigpa& Unani Pharmacy)
Homoeopathic Pharmacy Basics	Sources of Homoeopathic Pharmacy Branches of Pharmacy Scope of Homoeopathic Pharmacy Specialty and originality of Homoeopathic Pharmacy The Principles of Homoeopathy Law of Similia, Simplex & Minimum Theory of Chronic Disease & Vital Force Doctrine of Drug Proving & Drug Dynamisation

Homoeopathic Pharmacopoeia	The Evolution, History & Development of Homoeopathic Pharmacopoeias throughout the world (year wise Publications) – GHP, BHP, HPUS, FHP Official –(HPI) &Unofficial Pharmacopoeias – (M Bhattacharya & Co's Homoeopathic Pharmacopoeia Encyclopaedia of Homoeopathic Pharmacopoeia – P N Verma, Homoeopathic Pharmaceutical Codex) Monograph, Contents of Monograph with its individual importance
Ideal laboratory	Pre requisites of ideal Laboratory (General Laboratory), Laboratory safety Rules Role of Laboratory in Homoeopathic Pharmacy Education
Weights and measurements.	Metrology Basics & Units of Apothecary System, British Imperial System, Metric System Interrelationship between various systems of Weight & Measure Concept on Domestic Measures with Metric Equivalents
Nomenclature	The Basic Rules of Nomenclature Nomenclature of Homoeopathic Drugs Important terminologies like scientific names, common names, synonyms Anomalies in Nomenclature
Pioneers of Homoeopathic Pharmacy	Role & contributions of Pioneers in development of Homoeopathic Pharmacy
b) Raw Material: Drugs and Vehicles	

Source of drugs in Homoeopathy	Different sources - Plant kingdom, Animal kingdom, Mineral kingdom, Nosodes, Sarcodes, Imponderabilia, Synthetic source, New Sources - Allersode, Isodes with reference to their clinical utility Introduction to Bowel Nosodes, Tissue remedies
Collection of drug substances	General and Specific guidelines for collecting drugs from all available sources
Vehicles.	Definition, classification, General Use Source, Properties & Particular use of Vehicles with respect to List Provided in Appendix D Preparation – Commercial Lactose, Alcohol Purity tests – Water, Alcohol, Sugar of Milk
c) Homoeopathic Pharmaceutics:	
Mother tincture and its preparation	Extraction – Principles & Various Methods Old Method (Based on Class I to IX) Concept of Uniform Drug Strength Estimation of Moisture Content - Necessity New Method/Modern Approach of Homoeopathic Drug Preparation
Various Scales of Potentization in Homoeopathic pharmacy.	History of development, Introducer, Designation, Preparation, Administration & Application with respect to - Centesimal Scale, Decimal Scale & 50 Millesimal Scale

Drugs Dynamisation	The Evolution of Dynamisation - Concept in Homoeopathy Potentisation & its types The Merits of Potentisation Succussion & Trituration Various types of Potency– Fluxion Potency, Jumping Potency, Back Potency, Single Vial Potency, Multiple Vial Potency, Mixed Vial Potency Post-Hahnemannian Potentization Techniques
External applications	Scope of administration of External Applications in Homoeopathic Practice Dr Hahnemann's View as per Organon (5^{th}& 6^{th} Ed) Preparation & Uses of lotion, glycerol, liniment and ointment. Commercial Preparation of Ointment
Posology	Basic principles of Homoeopathic Posology Related aphorisms of Organon of medicine. Criteria for Selection of Potency & Repetition of Dose Various Kinds of Dose, Emphasis on Minimum Dose
Prescription	Prescription Writing Important Abbreviations Parts & Contents of Prescription Merits & Demerits of Prescription Writing
Dispensing of Homoeopathic Medicines	Various Dosage Forms – Solid, Liquid Dosage Forms, Methods of Dispensing

Placebo.	Concept of Homoeopathic Placebo The Philosophy of administration of placebo Concept of Placebo Effect
Pharmaconomy	Routes of Homoeopathic drug administration.
Preservation	Preservation Rules – Raw Materials Drug Substance, Mother Preparations, Finished products & Vehicles
d) Pharmacodynamics	
▪ Doctrine of Signature.	Basic Concept, Its Evolution & Application in Ancient Medical System Supporters of the Doctrine Dr Hahnemann's view on the Doctrine
▪ Drug Proving.	Homoeopathic Pharmacodynamics With reference to aphorisms 105 – 145 of Organon of Medicine – 6th Ed) Post Hahnemannian Drug Proving Homoeopathic Pathogenetic Trial (HPT) CCRH & Other Protocols on HPT Other Noted Provers & their work on Drug Proving
▪ Adverse Drug Reactions	Basic Idea, Reporting of ADE Drug safety with Ref to HPI Medication errors, Causality Assessment Incompatible Remedies

▪ Pharmaco-vigilance.	Pharmacovigilance in Homoeopathy Activities of Pharmacovigilance Centres Awareness on Medicinal Preparations against Homoeopathic Principles – Patents, Combinations
▪ Pharmacological study of drugs	listed in Appendix-A (Any 15)
e) Quality Control:	
• Standardisation in Homoeopathy	Different Methods of Standardisation Quality Control of Raw Materials – Various Evaluation techniques In Process Quality Control Quality Control of finished products – Various standard parameters
• Industrial pharmacy.	Good Manufacturing Practices (GMP) Schedule M1
• Homoeopathic pharmacopoeia laboratory (HPL)	Functions and Activities of HPL relating to quality control of drugs. Pharmacopoeia Commission for Indian Medicines
f) Legislations pertaining to Homoeopathic Pharmacy:	
The Drugs and Cosmetics Act, 1940 (23 to 1940)	
Drugs and Cosmetics Rules, 1945	
Medicinal and Toilet Preparations (Excise Duties) Act, 1955 (16 of 1955)	
Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 (21 of 1954)	
The Narcotic Drugs and Psychotropic Substances Act, 1985 (61 of 1985)	

Dangerous Drug Act, 1930
g) Recent Advances in Homoeopathic Pharmacy
Modern theories related with Homoeopathic Drug action 1. Principles of Drug action 2. Introduction to Nanomedicine 3. Molecular Mechanism of Drug Action 4. Mechanism of Action of Homoeopathic Medicines
Scope of Research in Homoeopathic Pharmacy 1. Drug Discovery 2. Principles of New Drug discovery 3. Clinical evaluation of New Drugs 4. Pre-Clinical Research in Homoeopathic Pharmacy
h) Homoeopathic Pharmacy - Relationships
Relation of Homoeopathic Pharmacy with Anatomy
Relation of Homoeopathic Pharmacy with Physiology
Relation of Homoeopathic Pharmacy with Materia Medica With reference to Source of Drugs, Identification, Common Name of Drugs, Role of Drug Proving & Other Types of Proving in construction of Materia Medica, Clinical Verification Family wise study of Sphere of action – Solanaceae, Loganiaceae, Compositae, Liliaceae, Anacardiaceae, Rubiaceaeetc

B. Practical – Lab Work – Field – Clinical Hospital Work

1. **Laboratory Work –**

Practical Class (Experiments) - Maintaining Record of Experiments Conducted

(Principle, Requirements, Calculation if applicable, Process, Label, Conclusion/Inference)

Practical Class (Demonstration) – Maintaining Records of Practical Demonstrated

(Principle, Requirements, Calculation if applicable, Process, Label, Conclusion/Inference)

Field Visits-

A) **Maintain File/Report on Visit to GMP Compliant Large Scale Medicine Manufacturing Unit (Format should be as per Appendix – E)**

B) **Maintain File/Report on Visit to Medicinal Plant Garden (Format should be as per Appendix - F)**

Activity –

(a) Clinical Hospital Work – Maintain Record (Activities/Posting in Dispensing Section, Prescriptions based on Homoeopathic Principles in IPD/OPD) – Record to be maintained as per format in Appendix G

(b) Seminar – Maintain Record on Seminar Presentation on Topics of Homoeopathic Pharmacy as assigned – Record to be maintained as per Appendix - H

(c) Herbarium – Maintenance of 30 Plant Drug Substances Samples

B. PRACTICALS

Table 5 : Homoeopathic Pharmacy Practicals	
Sr No.	
	Particulars of Experiments
1	Estimation of size of globules

2	Medication of globules (Small Scale)
3	Purity test of Sugar of milk
4	Purity test of water
5	Purity test of Ethyl alcohol
6	Determination of Specific gravity of a given liquid Vehicle & identifying the same.
7	Preparation of dispensing alcohol from strong alcohol.
8	Preparation of dilute alcohol from strong alcohol.
9	Trituration of drug in Old Method (One each of Class VII, VIII & IX)
10	Trituration of one drug as per HPI
11	Succussion in decimal scale from Mother Tincture (Prepared in Old Method) to 3X potency.
12	Succussion in decimal scale from Mother Tincture (Prepared in New Method) to 3X potency
13	Succussion in centesimal scale from Mother Tincture (Prepared in Old Method) to 3C
14	Succussion in centesimal scale from Mother Tincture (Prepared in New Method) to 3C
15	Conversion of Trituration to liquid potency: Decimal scale 6X to 8X potency.
16	Conversion of Trituration to liquid potency: Centesimal scale 3C to 4C potency.
17	Preparation of 0/2 potency (Solid form) (LM scale) of 1 Drug from 3rd Degree Trituration.
18	Preparation of external applications – Lotion
19	Preparation of external applications – Glycerol
20	Preparation of external applications – Liniment
21	Preparation of external applications – Ointment
22	Writing of prescription & Dispensing the Medicine in Water with preparation of Doses

23	Writing of prescription & Dispensing the Medicine in Sugar of Milk with Preparation of Doses
24	Preparation of mother tinctures according to Old Hahnemannian method (Class I, II, III, IV)
25	Preparation of mother solutions according to Old Hahnemannian method (Class Va, Vb, VIa, VIb)

Demonstration

1. Homoeopathic pharmaceutical instruments and appliances with their cleaning (List provided in Appendix C)

2. Estimation of moisture content using water bath

3. Paper chromatography & TLC of any mother tincture

4. Laboratory methods – Sublimation, distillation, decantation, filtration, crystallization.

5. Preparation of mother tincture – Maceration and Percolation

6. Study & demonstration of Drug Substances (listed in Appendix B)-

i)Macroscopic Characteristic (Any 15)

ii) Microscopic characteristic (Any 05)

7. Study & demonstration of vehicles (Solid, Liquid & Semi solid – as available)

8. Microscopical study of Trituration (One drug up to 3X Potency)

9. Medication of Globule (Large Scale)

Activities

1. Collection of 30 drugs for herbarium

2. Visit to a Large-scale manufacturing unit of Homoeopathic medicine (GMP compliant).

3. Visit to a Medicinal Plant /Botanical Garden & shall keep details Visit report

4. Clinical Class: Visit to IPD, OPD to take note on prescriptions as per Homoeopathic Principles &keep record

5. Visit to Hospital dispensing section to observe & gain knowledge on Dispensing techniques & Keep Records

Demonstration

1. Homoeopathic pharmaceutical instruments and appliances with their cleaning (List provided in Appendix C)-06 Hours

2. Estimation of moisture content using water bath-02 Hours

3. Paper chromatography & TLC of any mother tincture-04 Hours

4. Laboratory methods – Sublimation, distillation, decantation, filtration, crystallization.-04 Hours

5. Preparation of mother tincture – Maceration and Percolation- 04 Hours

6. Study & demonstration of Drug Substances (listed in Appendix B)- 10 Hours

i)Macroscopic Characteristic (Any 15)

ii) Microscopic characteristic (Any 05)

7. Study & demonstration of vehicles (Solid, Liquid & Semi solid – as available)- 02 Hours

8. Microscopical study of Trituration (One drug up to 3X Potency)-02 Hours

9. Medication of Globule (Large Scale)-1 Hour

Clinical Hospital Work – Maintain Record (Activities/Posting in Dispensing Section, Prescriptions based on Homoeopathic Principles in IPD/OPD) – Record to be maintained as per format in Appendix G- 20 Hours

Seminar – Maintain Record on Seminar Presentation on Topics of Homoeopathic Pharmacy as assigned- 07 Hours

6.TEACHING LEARNING METHODS

The Teaching Learning activities in Homoeopathic Pharmacy requires change in structure & process in order to be more skill based & providing hands on experience. The Teaching Learning methods with respect to Homoeopathic Pharmacy may be covered in the following manner –

a) **Class Room Lectures** – Oral Presentation, Board Work, Power point Presentation

b) **Tutorials** – Special Classes on Doubt Clearing of Completed topics/Chapters, Special Classes for Slow Learners (involving Students in Groups comprising 5-10)

c) **Practical Class** – Demonstration & Explanation of the Experiments, this would follow by conduction of the Experiment by the students on their own, write up of the Experiment conducted

d) **Clinical Class** – Visit **to** IPD/OPD for gaining Knowledge on Prescription writing, Administration of Homoeopathic medicines based on Homoeopathic Posology, Visiting Hospital Pharmacy to observe & Gain Knowledge on dispensing techniques

e) **Field Visit** – Visit to One GMP Compliant Homoeopathic Manufactory.

Visit to One Medicinal Plant Garden

f) **Student Activities –** Working out the Assignments, Projects, Power point presentations as assigned

7.**CONTENT MAPPING (COMPETENCY TABLE)**

Topic: History of Pharmacy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to –

Interpret the difference in concept of Pharmacy in different AYUSH systems of medicine

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation		Integration
										Formative	Type (Summative)	
HomUG-HP-1.1.1	Integration of	History of Pharmacy with emphasis to emergence of	Knows	Must be able to interpret the difference in	Define Pharmacy	Cognitive	Lvel1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/	1.Structured Oral Examination 2. Tutorials	Theory & Viva Voce	Horizontal with Organon of Medicine

	Knowledge Synthesis and application of knowledge	Homoeopathic Pharmacy		concept of Pharmacy among various systems of AYUSH					3.Peer teaching (Think-Pair-Share, Jigsaw Strategy) 4. Quiz 5. Student Seminars 6. Integrated Teaching with Organon of Medicine	3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's		
HomUG-HP-1.1.2			Knows		Define Homoeopathic Pharmacy		Level 1 Recall	Must know				
HomUG-HP-1.1.3			Knows		Describe the Basic concepts of Different schools of Pharmacy with reference to AYUSH		Level 2 Understand	Nice to Know				
Hom-UG-HP-1.1.4			Knows		Differentiate between Drug-Medicine-Remedy		Level 2 Understand	Must know				

TOPIC: Basics of Homoeopathic Pharmacy

Topic: Basics of Homoeopathic Pharmacy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to –
Enumerate the fundamental Principles of Homoeopathic Pharmacy

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation		Integration
										Formative	Summative	Horizontal Integration with Organon of Medicine
HomUG-HP-1.2.1	Integration of Knowledge Synthesis and	Basics of Homoeopathic Pharmacy	Knows	Must be able to state the fundamental Principles governi	1.Enumerate the Sources of Homoeopathic Pharmacy	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions /	1.Structured Oral Examination 2. Tutorials	SAQ MCQ LAQ Viva Voce	

HomUG-HP-1.2.2	Application of knowledge		Knows	ng Homoeopathic Pharmacy	2.Explain the Branches of Homoeopathic Pharmacy		Level 2 Understanding	Must Know	Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning	3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's		
HomUG-HP-1.2.3			Knows		3.Illustrate the Scope of Homoeopathic Pharmacy		Level 2 Understanding	Must Know				
Hom-UGHP-1.2.4			Knows		4.Describe the Originality & Specialty of Homoeopathic Pharmacy		Level 2 Understanding	Must Know				
HomUG-			Knows		5.Explain the Funda		Level 2	Must Know				

HP-1.2.5					mental Principles, Laws & Doctrines related to Homoeopathic Pharmacy		Understanding					

TOPIC: Nomenclature of Homoeopathic Medicines

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to –
State the basic rules of Nomenclature of Homoeopathic medicines
.

Sr. No	Generic Competencies	Subject Area	Miller'sLevel Does / Shows how/ Kno	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

			ws how/ Know					Nice to know			
Hom UG-HP-1.3.1	Integration of Knowledge Synthesis and Application of knowledge	Nomenclature of Homoeopathic Medicines	Knows	Must be able to describe the principles followed in nomenclature of Homoeopathic medicines	1.State the Basic rules of Nomenclature	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	SAQ Viva Voce
Hom UG-HP-1.3.2			Knows		2.Describe the nomenclature of Homoeopathic Drugs		Level 2 Understanding	Must Know			
Hom UG-HP-1.3.3			Knows		3.Enumerate the important terminologies related to Nomenclature		Level 1 Recall	Must Know			
Hom UG-			Knows		4.Define Scientific Name		Level 1 Recall	Must Know			

HP-1.3.4											
Hom UG-HP-1.3.5			Knows		5.Define Common Name		Level 1 Recall	Must Know			
Hom UG-HP-1.3.6			Knows		6.Enumerate the advantages of Scientific Name	Cognitive	Level 1 Recall	Must Know			
Hom UG-HP-1.3.7			Knows		7.Enumerate the Advantages of Common Name	Cognitive	Level 1 Recall	Must know			
Hom UG-HP-1.3.8			Knows		8.Identify the existing anomalies in Nomenclature of Homoeopathic Medicines	Cognitive	Level 3 Problem Solving	Nice to know	1.Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning		

TOPIC: Pioneers of Homoeopathic Pharmacy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to.-
State the Contribution of various Pioneers in the field of Homoeopathic Pharmacy

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
HomUG-HP-1.4.1	Integration of Knowledge Synthesis and Application of knowledge	Pioneers of Homoeopathic Pharmacy	Knows	Must be able to state the contributions of various pioneers in the field of Homoeopathic Pharmacy	1.Outline the contributions of the Pioneers of Homoeopathy in the field of Homoeopathic Pharmacy	Cognitive	Level 1 Recall	Nice to Know	1.Lecture Demonstrations 2. Small Group Discussions/ 3. Quiz 4. Student Seminars	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	SAQ MCQ Viva Voce

TOPIC: Pharmacopoeia

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able abide by the homoeopathic pharmacopoeia guidelines for preparation of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-	Problem solution	Pharmacopoeia	Knows	Must be able abide by the	1. Define Pharmacopoeia	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations	1.Structured Oral	SAQ MCQ

HP-1.5.1	Integration of Knowledge Synthesis and application of knowledge			homoeopathic pharmacopoeia guidelines for preparation of homoeopathic medicines.					2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars	Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's, LAQ's 7.Projects	Viva Voce
Hom UG-HP-1.5.2			Knows		2. Enumerate the different types of homoeopathic pharmacopoeia with suitable examples.		Level 1 Recall	Must Know			
Hom UG-HP.1.5.3			Knows		3. Explain the different types of homoeopathic pharmacopoeia.		Level 2 Understanding	Must Know			
Hom UG-HP-1.5.4			Knows		4. Explain HPI in detail		Level 2 Understanding	Must Know			
Hom UG-			Knows		5. Explain what is		Level 2	Must Know			

HP-1.5.5					monograph?		Understanding				
Hom UG-HP-1.5.6			Knows how		6.Apply the guidelines laid down in the official homoeopathic pharmacopoeia w.r.t. identification, collection, preservation, preparation and dispensing of homoeopathic medicine	Cognitive	Level 3 Problem solving	Nice to know	1. Practical Demonstration 2. Lecture Demonstration 3. Projects 4. Herbarium 5. Journal	1. DOPS 2. OSPE 3. Evaluation of projects 4. Evaluation of Journal & Herbarium	SAQ MCQ LAQ Viva Voce Practical Examination / Checklist
Hom UG-HP-1.5.7			Knows how		7.Demonstrate care, professionalism & commitmen	Affective	Level 1 Receiving	Nice to know	1. Practical Demonstration	1. DOPS 2. OSPE	Viva Voce

					t & follow all the guidelines meticulously as given in official homoeopathic pharmacopoeia w.r.t. identification, collection, preservation, preparation and dispensing of homoeopathic medicine				2. Lecture Demonstration 3. Projects 4. Herbarium 5. Journal	3. Evaluation of projects 4. Evaluation of Journal & Herbarium	

TOPIC: Plant Kingdom

Topic: Plant Kingdom

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify the plant drug substances for preparation of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Type **S**ummative
Hom UG-HP-1.6.1	Integration of knowledge Synthesis and application of knowledge Classroom to herbarium and lab transfer	Sources of drugs	Knows	Must be able to identify the plant drug substances for preparation of homoeopathic medicines.	1. Explain in detail the part used and drug prepared from plant kingdom	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's 7. Herbarium	SAQ MCQ LAQ Viva Voce
Hom UG-HP-1.6.2			Knows		2. List any 4 examples of drugs from particular part of the plant.		Level 1 Recall	Must know			

Hom UG-HP-1.6.3			Knows		3. Explain classification of plant kingdom with examples.		Level 2 Understanding	Must know	5. Guest Lecture 6. Problem based learning 7. Flipped Classroom 8. Videos		
Hom UG-HP-1.6.4			Does		4. Identify the plant and its parts used for preparation of homoeopathic medicines	Cognitive	Level 3 Problem solving	Must know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Herbarium 4. Experiential learning (Projects)	1.DOPS 2. OSPE 3. Herbarium	Practical Examination
Hom UG-HP-1.6.5			Shows how		5.Demonstrate care while identifying & collecting the	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration	1.Herbarium	Practical Examination

					plant drug substances				2. Problem Based Learning		

TOPIC: Animal Kingdom

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify the animal drug substances for preparation of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom'sDomain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

Hom UG-HP-1.7.1	Integration of knowledge Synthesis and application of knowledge Classroom to herbarium and lab transfer	Sources of drugs	Knows	Must be able to identify the animal drug substances for preparation of homoeopathic medicines.	1. Explain the part used and drug prepared from animal kingdom	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions / Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning 7. Flipped Classroom 8. Videos	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's 7. Herbarium	LAQ SAQ MCQ Viva Voce
Hom UG-HP-1.7.2			Knows		2. List any 4 examples of drugs from particular part of the animal.		Level 1 Recall	Must Know			

Hom UG-HP-1.7.3			Knows		3. Explain classification of animal kingdom		Level 2 Understanding	Must Know			
Hom UG-HP-1.7.4			Does		4. Identify the animal and its parts used for preparation of homoeopathic medicines	Cognitive	Level 3 Problem Solving	Must Know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Herbarium 4. Experiential learning (Projects)	1.DOPS 2. OSPE 3. Herbarium	Practica Examina tion
Hom UG-HP-1.7.5			Shows how		5.Demonstrate care while identifying & collecting the animal	Affective	Level 1 Receiving	Must Know	1.Lecture Demonstration 2. Problem Based Learning	1.Herbarium	Practica Examina tion

					drug substances						

TOPIC: Mineral Kingdom

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify the mineral drug substances for preparation of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-HP-1.8.1	Integration of knowledge Synthesis and application of knowledge	Sources of drugs	Knows	Must be able to identify the mineral drug substances for preparation of	1. Explain the part used and drug prepared from mineral kingdom	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching	1.Structured Oral Examination 2. Tutorials	LAQ SAQ MCQ Viva Voce

	Classroom to herbarium and lab transfer			homoeopathic medicines.					(Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning 7. Flipped Classroom 8. Videos	3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's 7. Herbarium	
Hom UG-HP-1.8.2			Knows		2. List any 4 examples of drugs from prepared from minerals.		Level 1 Recall	Must know			
Hom UG-HP-1.8.3			Knows		3. Explain the classification of mineral kingdom		Level 2 Understanding	Must know			
Hom UG-HP-1.8.4			Does		4. Identify the mineral used for preparation of homoeopathic medicines	Cognitive	Level 3 Problem solving	Must know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Herbarium	1.DOPS 2. OSPE 3. Herbarium	Practical Examination

									4. Experienti al learning (Projects)		
Hom UG-HP-1.8.5			Shows how		5.Demonstrate care while identifying &collecting the mineral drug substances	Affectiv e	Level 1 Receiving	Nice to know	1.Lecture Demonstr ation 2. Problem Based Learning	1.Herbari um	Practi al Exami ation

TOPIC: Sarcodes &Nosodes

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify the drug substances from nosodes and sarcodes for preparation of homoeopathic medicines.

Sr. No			Miller's			Bloom's	Guilbert's Levels	Must to		Assessment /Evaluation

	Generic Competencies	Subject Area	Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Domain		know/ desirable to know/Nice to know	Teaching - Learning Method	Formative	Summative
HomUG-HP-1.9.1	Integration of knowledge Synthesis and application of knowledge Classroom to herbarium and lab transfer	Sources of drugs	Knows	Must be able to identify the drug substances from nosodes and sarcodes for preparation of homoeopathic medicines	1. Explain the part used and drug prepared from nosodes	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's	LAQ SAQ MCQ Viva Voce
HomUG-HP-1.9.2			Knows		2. List any 4 examples of drugs from prepared from nosodes.		Level 1 Recall	Must Know			

HomUG-HP 1.9.3			Knows		3. Explain classification of nosodes.		Level 2 Understanding	Must Know	6. Problem based learning 7. Flipped Classroom 8. Videos		
HomUG-HP 1.9.4			Knows		4.Explain the part used and drug prepared from sarcodes		Level 2 Understanding	Must Know			
HomUG-HP 1.9.5			Knows		5. List any 4 examples of drugs from prepared from sarcodes		Level 1 Recall	Must Know			
HomUG-HP 1.9.6			Knows		6. Explain classification of sarcodes		Level 2 Understanding	Must Know			

HomUG-HP 1.9.7			Does		7. Identify the sarcode/nosode used for preparation of homoeopathic medicines	Cognitive	Level 3 Problem solving	Must know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Experiential learning (Projects)	1.DOPS 2. OSPE	Practical Examination
HomUG-HP 1.9.8			Shows how		8.Demonstrate care while identifying & collecting the diseased part/secretion for preparation of nosodes&healthy part/secretion for preparation of sarcodes	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 2. Problem Based Learning	1.Monographs	Practical Examination

TOPIC: Imponderabilia

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify the drug substances from energy sources for preparation of homoeopathic medicines.

Sr. No	Generic Competencies		Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
											Formative	Summative
Hom UG-HP-1.10.1	Integration of knowledge Synthesis and application of knowledge Classroom to herbarium and lab transfer		Sources of drugs	Knows	Must be able to identify the drug substances from energy sources for preparation of homoeopathic medicines.	1. Explain the energy used and drug prepared from imponderabilia	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ SAQ MCQ Viva Voce
Hom UG-HP-				Knows		2. List any 4 examples of drugs prepared from		Level 1 Recall	Must know			

1.10.2						imponderabilia				4. Student Seminars 5. Guest Lecture 6. Problem based learning 7. Flipped Classroom 8. Videos	6.SAQ's and LAQ's	
Hom UG-HP-1.10.3				Knows		3. Explain classification of imponderabilia.		Level 2 Understanding	Must know			
Hom UG-HP-1.10.4				Does		4. Identify the energy source used for preparation of homoeopathic medicines from imponderabilia	Cognitive	Level 3 Problem solving	Nice to know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Experiential learning (Projects)	1.DOPS 2. OSPE	Practical Examination

Hom UG-HP-1.10.5				Shows how		5.Demonstrate care & commitment while identifying & collecting the different energy sources for preparation of imponderabilia medicines	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 2. Problem Based Learning	1.Monographs	Practical Examination

TOPIC: Allersodes, Isodes, Synthetic Source

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify drug substances of Allersodes, Isodes, Synthetic Source for preparation of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/	Teaching - Learning Method	Assessment /Eval

			Knows how/ Know					desirable to know/Nice to know		uation	
										Formative	Summative
Hom UG-HP-1.11.1	Integration of knowledge Synthesis and application of knowledge Classroom to herbarium and lab transfer	Sources of drugs	Knows	Must be able to identify drug substances of Allersodes, Isodes, Synthetic Source for preparation of homoeopathic medicines.	1. Explain the preparation of Allersodes, Isodes& Synthetic Source of homoeopathic medicines	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's	LAQ SAQ MCQ Viva Voce

Hom UG-HP-1.11.2			Knows		2. List any 4 examples of drugs prepared from Allersodes, Isodes&Synthetic Source		Level 1 Recall	Must know	4. Student Seminars 5. Guest Lecture 6. Problem based learning 7. Flipped Classroom 8. Videos	5. 2 marks question 6.SAQ's and LAQ's	
Hom UG-HP-1.11.3			Does		3. Identify the part used for preparation of Allersodes, Isodes& Synthetic Source.	Cognitive	Level 3 Problem solving	Must know	Experiential learning (Projects)	Projects	Practical Examnatio

Hom UG-HP-1.11.4			Shows how		4.Demonstrate care & commitment while identifying & collecting the different parts for preparation of Allersodes, Isodes& Synthetic Source	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 2. Problem Based Learning	1.Projects	Practical Examnatio

TOPIC: Collection of Drug Substances

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to collect a particular part/ source for preparation of homoeopathic drugs

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

								to know/Nice to know			
HomUG-HP-1.12.1	Problem solution Integration of Knowledge Synthesis and application of knowledge	Collection of Drug Substances	Knows	Must be able to collect a particular part/ source for preparation of homoeopathic drugs	1. Explain the general rules for collecting drugs from vegetable kingdom.	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAC SAC MC Q Viv a Voc e
HomUG-HP-1.12.2	Classroom to Herbarium transfer		Knows		2. Explain the particular rules for collecting drugs from vegetable kingdom.		Level 2 Understanding	Must know			

HomUG-HP-1.12.3	Practice based learning and improvement		Knows		3. Explain the general rules for collecting drugs from animal kingdom.		Level 2 Understanding	Must know	Seminars 5. Guest Lecture 6. Flipped Classroom 7. Videos	6.SAQ's and LAQ's 7.Projects 8. Herbarium
HomUG-HP-1.12.4			Knows		4. Explain the particular rules for collecting drugs from animal kingdom.		Level 2 Understanding	Must know		
HomUG-HP-1.12.5			Knows		5. Explain the collection of drugs from mineral kingdom.		Level 2 Understanding	Must know		
HomUG-HP-1.12.6			Knows		6. Explain collection of Nosodes, Sarcodes &Imponderabilia.		Level 2 Understanding	Must know		

HomUG-HP-1.12.7			Does		7. Collect the drugs from vegetable kingdom.	Psycho motor	Level 3 Automation	Must know	1. Practical Demonstrations 2. Procedural Skills Teaching 3.Experiential Learning	1.DOPS 2.OSPE 3.Projects 4.Spotting 5.Herbarium.	Practical Examination
HomUG-HP-1.12.8			Does		8. Collect the drugs from animal kingdom.		Level 3 Automation	Must know			
HomUG-HP.1.12.9			Does		9. Collect the drugs from nosodes, sarcodes & imponderabilia.		Level 2 Control	Must know			
HomUG-HP-1.1			Shows how		10. Demonstrate care & commitment while	Affective	Level 1 Recieving	Nice to know	1. Lecture Demonstration	Herbarium	Practical Exam

2.10					collecting drugs from vegetable kingdom, animal kingdom, nosodes, sarcodes &imponderabilia.				2. Practical Demonstration		atio n

TOPIC: Cleansing

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to clean the instruments used in homoeopathic pharmaceutical laboratory.

			Miller's					Must to		Assessment /Evaluation

Sr. No	Generic Competencies	Subject Area	Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	know/ desirable to know/Nice toknow	Teaching - Learning Method	Formative	Summative
Hom UG-HP-1.13.1	Integration of Knowledge Synthesis and application of knowledge Classroom to Lab transfer Practice based learning and	Cleansing of instruments	Knows	Must be able to clean the instruments used in homoeopathic pharmaceutical laboratory	1. Explain the cleansing of mortar & pestle.	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Flipped Classroom	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's 7.Projects	LAQ SAQ MCQ Viva Voce
Hom UG-HP-1.13.2			Knows		2. Explain the cleansing of spatula.		Level 2 Understanding	Must know			
Hom UG-HP.1.13.3			Knows		3. Explain the cleansing of glass bottles.		Level 2 Understanding	Must know			

Hom UG-HP.1 .13.4	improvement		Knows		4. Explain the cleansing of corks.		Level 2 Understanding	Must know			
Hom UG-HP.1 .13.5			Knows		5. Explain the cleansing of wooden instruments .		Level 2 Understanding	Must know			
Hom UG-HP.1 .13.6			Does		6. Demonstrate the cleansing of mortar & pestle.	Psycho motor	Level 3 Automatism	Must know	1. Practical Demonstrations 2. Procedural Skills Teaching 3.Experiential Learning	1.DOPS 2.OSPE 3.Spotting	Practical Examination
Hom UG-HP.1 .13.7			Does		7. Demonstrate the cleansing of spatula		Level 3 Automatism	Must know			
Hom UG-HP-			Does		8. Demonstrate the cleansing of		Level 3 Automatism	Must know			

1.13.8					glass bottles.						
Hom UG-HP-1.13.9			Does		9. Demonstrate the cleansing of corks.		Level 3 Automatism	Must know			
Hom UG-HP-1.13.10			Does		10. Demonstrate the cleansing of wooden instruments.		Level 3 Automatism	Must know			
Hom UG-HP-1.13.11			Shows how		11. Demonstrate care while cleaning the instruments.	Affective	Level 1 Receiving	Nice to know	1. Lecture Demonstration 2. Practical Demonstration	1.DOPS 2.OSPE	Practical Examination

TOPIC: Lab Methods

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select and apply a particular lab method for preparation of homoeopathic medicines and for standardization of homoeopathic medicines.

Sr. no	Generic Competencies	Subject Area		Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
											Formative	Summative
Hom.UG-HP-1.14.1	Problem solution Integration of Knowledge Synthesis and application of knowledge Classroom to lab transfer	Lab Methods		Knows	Must be able to select and apply a particular lab method for preparation of homoeopathic medicines and for standardization of homoeopat	1. Define decantation, sedimentation, filteration, distillation, sublimation, precipitation.	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ SAQ MCQ Viva Voce

	Practice based learning and improvement				hic medicines					5. Guest Lecture 6. Problem based learning 7. Flipped Classroom 8. Videos	6.SAQ's and LAQ's 7.Projects
Hom.UG-HP-1.14.2				Knows		2. Explain the process of decantation,sedimentation, filteration, distillation, sublimation,precipitation		Level 2 Understanding	Must know		
Hom.UG-HP-1.14.3				Knows		3.Explain the homoeopathic uses of decantatio, sedimentation,filteration,distillation,sublimation,precipitation		Level 2 Understanding	Must know		

Hom.UG-HP-1.14.4				Knows how		4.Differentiate between filteration&distillation		Level 2 Understanding	Must know			
Hom.UG-HP-1.14.5				Knows how		5. Differentiate between decantation &filteration in detail.		Level 2 Understanding	Must know			
Hom.UG-HP-1.14.6				Does		6. Select a specific lab method according to the different processes carried out in a homoeopathic pharmacy laboratory.		Level 3 Problem solving	Desirable to know			
Hom.UG-HP-1.14.7				Does		7. Demonstrate the processes decantation,sedimentation,filteration,distillation,subl	Psycho motor	Level 2 Control	Desirable to know	1. Practical Demonstrations 2. Procedural	1.DOPS 2.OSPE 3.Projects	Practical Examnation

						imation,precipitation				Skills Teaching 3.Experiential Learning		
Hom.UG-HP-1.14.8				Shows how		8.Demonstrate care & commitment while carrying out the different lab methods involved in preparation of homoeopathic medicine	Affective	Level 1 Receiving	Nice to know	1. Lecture Demonstration 2. Practical Demonstration	DOPS	Practical Examination

TOPIC: Standardization of homoeopathic drugs

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select an appropriate method for standardization of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/	Specific Competencies	Specific Learning Objectives	Bloom'sDomain	Guilbert's Levels	Must to know/ desirable	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

			Knows how/ Know					to know/Nice to know			
Hom. UG-HP-1.15.1	Integration of Knowledge Synthesis and application of knowledge Classroom to Lab transfer Practice based learning and improvement	Standardization of homoeopathic drugs	Knows	Must be able to select an appropriate method for standardization of homoeopathic medicines	1. Enumerate the different methods of standardization of homoeopathic drugs	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Flipped Classroom 6. Videos	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's 7.Projects	LAQ SAQ MCQ Viva Voce
Hom. UG-HP-1.15.2			Knows		2. Explain the individual method of standardization of homoeopathic drugs	Cognitive	Level 2 Understanding	Must know			
Hom. UG-HP-1.15.3			Does		3. Estimate the standard of homoeopathic drugs before and		Level 2 Control	Desirable to know			

					after manufacturing of homoeopathic medicines.	Psycho motor					
Hom. UG-HP-1.15.4			Does		4. Demonstrate the microscopic study of triturations.	Psycho motor	Level 2 Control	Desirable to know	1. Practical Demonstrations 2. Procedural Skills Teaching 3.Experiential Learning 4. Research Projects	1.Spotting 2. Assessment of research project output	Viva Voce & Practical Examinations
Hom. UG-HP-1.15.5			Does		5. Identify the drug specimen applying the different methods of standardization of drugs	Cognitive	Level 3 Problem solving	Desirable to know			
Hom. UG-HP-1.15.6			Does		6. Analyze the purity of mother tincture with the	Psycho motor	Level 2 Control	Nice to know			

					help of HPTLC.						
Hom. UG-HP-1.15.7			Does		7. Analyze and identify the purity of mother substances and dilutions with the help of U.V. Spectroscopy.	Psycho motor		Nice to know			
Hom. UG-HP-1.15.8			Shows how		8.Abide by the rules of standardization of homoeopathic drugs laid down by HPL & value the importance of genuine medicine in homoeopathic practice.	Affective	Level 3 Internalizing	Nice to know	1. Lecture Demonstration 2. Monographs	Herbarium Assignments	Viva Voce

TOPIC: Quality Control in Homoeopathy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to conduct the quality control as per the appropriate method

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching-Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom.UG-HP-1.16.1	Integration of Knowledge Synthesis and application of knowledge Classroom to Lab transfer	Quality control	Knows	Must be able to conduct the quality control as per the appropriate method	1. Enumerate the different methods of quality control.	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's	LAQ SAQ MCQ Viva Voce
Hom.UG-HP-1.16.2			Knows		2. Explain the individual method of quality control in		Level 2 Understanding	Must Know			

	Practice based learning and improvement				homoeopathy				Strategy) 3. Quiz 4. Student Seminars 5. Flipped Classroom 6. Videos	5. 2 marks question 6.SAQ's 7.Projects
Hom.UG-HP-1.16.3			Knows		3.Explain the functions of HPL in quality control of Homoeopathic medicines		Level 2 Understanding	Must Know		
Hom.UG-HP-1.16.4			Does		4. Determine the quality of homoeopathic medicine based on the parameters of quality control		Level 3 Problem solving	Nice to Know		
Hom.UG-HP-1.16.5			Does		5. Take part in the process of quality control at different stages of preparation of		Level 3 Problem solving	Nice to Know		

					homoeopathic medicines.						
Hom.UG-HP-1.16.6			D oes, shows how		6. Demonstrate the microscopic study of triturations.	Psycho motor	Level 2 Control	Nice to Know	1. Practical Demonstrations 2. Procedural Skills Teaching 3.Experiential Learning 4. Research Projects	1.Spotting 2.Assessment of the outcome of research projects	Viva Voce & Practical Examinations
Hom.UG-HP-1.16.7					7. Analyze the purity of mother tinctures with the help of HPTLC.		Level 2 Control	Nice to know			
Hom.UG-HP-1.16.8			Does		8. Analyze and identify the purity of mother substances and dilutions with the help of U.V.			Nice to know			

					Spectroscopy.						
Hom.UG-HP-1.16.9			Does		9.Abide by the rules of quality control laid down by HPL & value the importance of genuine medicine in homoeopathic practice.	Affective	Level 3 Internalizing	Nice to know	1. Lecture Demonstration 2. Practical Demonstration	SAQ/LAQ Projects Assignments	Practical Examination

TOPIC: Ideal Laboratory

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to –

1. State the pre requisites of an Ideal Laboratory

Sr. No		Subject Area	Miller's Level Does/			Bloom's Domain	Guilbert's Levels	Must to		Assessment /Evaluation

	Generic Competencies		Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives			know/ desirable to know/Nice to know	Teaching - Learning Method	Formative	Summative
Hom.UG-HP-1.17.1	Integration of Knowledge Synthesis and Application of knowledge Problem formulation Classroom to lab transfer	Ideal Laboratory	Knows	Must be able to state the pre requisites of an ideal laboratory	List the pre requisites for an ideal Laboratory	Cognitive	Level 2 Understanding	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ SAQ MCQ Viva Voce
Hom.UG-HP-1.17.2			Knows		Formulate the Laboratory Safety Rules		Level 3 Problem solving	Nice to know			
Hom.UG-HP-1.17.3			Knows		Describe the role of Laboratory in Homoeopathic Pharmacy education		Level 2 Understanding	Desirable to know			

									6. Problem based learning	6.SAQ ’s and LAQ’s	

TOPIC: Industrial Pharmacy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to –
Correlate the provisions under Schedule M-I

Sr. No	Generic Competencies	Subject Area	Miller’s Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom’s Domain	Guilbert’s Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

Hom. UG-HP-1.18.1	Integration of Knowledge Synthesis and Application of knowledge Problem formulatio Classroom to lab transfer	Industrial Pharmacy	Knows	Must be able to correlate provisions related to Schedule M1	Explain in details the provisions under Schedule M-I	Cognitive	Level 2 Understanding	Must Know	1.Lecture Demonstrations 2. Small Group Discussions / Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Field Visit	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's	LAC SAC MC Viva Voc

TOPIC: Homoeopathic Vehicles- Solid Vehicles

Topic: Homoeopathic Vehicles- Solid Vehicles

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select a particular solid vehicle for preparation or dispensing of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom.UG-HP-1.19.1	Integration of Knowledge Synthesis and Application of knowledge	Vehicles	Knows	Selecting a particular solid vehicle for preparation or dispensing of homoeopathic medicines.	1.Define Vehicle	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions / Peer teaching (Think-Pair-Share, Jigsaw Strategy)	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's	LAQ SAQ MCQ Viva Voce
Hom.UG-HP-1.19.2			Knows		2.Classify vehicles in detail		Level 2 Understanding	Must Know			

Hom.UG-HP-1.19.3	Problem formulation Classroom to lab transfer		Knows		3. List all the solid vehicles used in homoeopathy.		Level 1 Recall	Must Know	3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning	5. 2 marks question 6.SAQ's and LAQ's	
Hom.UG-HP-1.19.4			Knows		4. Explain the preparation, properties and uses of all solid vehicles		Level 2 Understanding	Must Know			
Hom.UG-HP-1.19.5			Does		5. Select the appropriate solid vehicle for dispensing of homoeopathic medicines, potentisation etc.		Level 3 Problem Solving	Must Know			
Hom.UG-HP-1.19.6			Does		6. Identify the given solid vehicle.	Cognitive	Level 3 Problem solving	Must Know	1.Practical Demonstration 2.Procedural Skills Teaching	1.DOPS 2. OSPE	Practical Examination

									3. Problem Based Learning			
Hom .UG-HP-1.19.7			Show How		7. Estimate the purity of the given solid vehicle.	Psychomotor	Level 2 Control	Must know	4. Experiential learning			
Hom .UG-HP-1.19.8			Shows how		8.Demonstrate care and commitment in preparing & dispensing of homoeopathic medicine with accuracy	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Practical Demonstration	1.DOPS	Practical Examination	

TOPIC: Homoeopathic Vehicles- Liquid Vehicles

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select a particular liquid vehicle for preparation or dispensing of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objective	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom.UG-HP-1.20.1	Integration of Knowledge Synthesis and Application of knowledge Problem formulation	Vehicles	Knows	Selecting a particular liquid vehicle for preparation or dispensing of homoeopathic medicines.	1.Define Vehicle	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's	LAQ SAQ MCQ Viva Voce
Hom.UG-HP-1.20.2			Knows		2.Classify vehicles in detail		Level 2 Understanding	Must Know			
Hom.UG-HP-1.20.3			Knows		3. List all the liquid vehicles used in homoeopathy.		Level 1 Recall	Must Know			

Hom.UG-HP-1.20.4	Classroom to lab transfer		Knows		4. Explain the preparation, properties and uses of all liquid vehicles.		Level 2 Understanding	Must Know	4. Student Seminars 5. Guest Lecture 6. Problem based learning	5. 2 marks question 6.SAQ's and LAQ's	
Hom.UG-HP-1.20.5			Does		5. Select the appropriate liquid vehicle for dispensing of homoeopathic medicines, potentisation etc.		Level 3 Problem solving	Must Know			
Hom.UG-HP-1.20.6			Does		6. Identify the given liquid vehicle.	Cognitive	Level 2 Understanding	Must Know	1.Practical Demonstration 2.Procedural Skills Teaching	1.DOPS 2. OSPE	Practical Examination

									3. Problem Based Learning 4. Experiential learning		
Hom.UG-HP-1.20.7			Shows how		7. Estimate the purity of the given liquid vehicle.	Psycho motor	Level 2 Control	Must Know			
Hom.UG-HP-1.20.8			Shows how		8.Demonstrate care and commitment in preparing & dispensing of homoeopathic medicine with accuracy	Affective	Level 1 Receiving	Nice to Know	1.Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Practical Demonstration	1.DOPS	Practical Examination

TOPIC: Homoeopathic Vehicles- Semi-solid Vehicles

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select a particular semi solid vehicle for preparation or dispensing of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom.UG-HP-1.21.1	Integration of Knowledge	Semisolid Vehicles	Knows	Selecting a particular semi-solid vehicle for preparation or dispensing of homoeopathic medicines.	1.Define Vehicle	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ SAQ MCQ Viva Voce
Hom.UG-HP-1.21.2	Synthesis and Application of		Knows how		2.Classify vehicles		Level 2 Understanding	Must Know			

Hom.UG-HP-1.21.3	knowledge		Knows		3. List all the semi-solid vehicles used in homoeopathy		Level 1 Recall	Must Know	4. Student Seminars 5. Guest Lecture 6. Problem based learning	6.SAQ's and LAQ's	
Hom.UG-HP-1.21.4	Problem formulation Classroom to lab transfer		Knows		4. Explain the preparation, properties and uses of all semi-solid vehicles		Level 2 Understanding	Must Know			
Hom.UG-HP-1.21.5			Does		5. Select the appropriate semi-solid vehicle for dispensing of homoeopathic medicines, preparation of external applications etc.		Level 3 Problem solving	Must Know			
Hom.UG-HP-1.21.6			Does		6. Identify the given semi-solid vehicle.	Cognitive	Level 3 Problem solving	Must know	1.Practical Demonstration 2.Procedural Skills Teaching	1.DOPS 2. OSPE	Practical Examination

Hom.UG-HP-1.21.7			Shows how		7. Estimate the purity of the given semisolid vehicle.	Psychomotor	Level 2 Control	Must know	3. Problem Based Learning 4. Experiential learning		
Hom.UG-HP-1.21.8			Shows how		8.Demonstrate care and commitment in preparing & dispensing of homoeopathic medicine with accuracy	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Practical Demonstration	1.DOPS	Practical Examination

TOPIC: External Applications

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to prescribe an external application as per the scope and limitations of external applications.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom'sDomain	Guilbert's levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation		Integration
										Formative	Summative	
Hom.UG-HP-1.22.1	Integration of Knowledge Synthesis and Application of knowledge Problem formulation	External Applications	Knows	Prescribing an external application as per its scope and limitations	1.Define External Application	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's	LAQ SAQ MCQ Viva Voce	Horizontal with Organ Medicine

Hom .UG-HP-1.22.2	Classroom to lab transfer		Knows		2. List all the external applications used in homoeopathy		Level 1 Recall	Must know	6. Problem based learning 7. Flipped Classroom			
Hom .UG-HP-1.22.3			Knows		3. Explain the preparation &uses of specific homoeopathic external applications		Level 2 Understanding	Must know				

Hom.UG-HP-1.22.4			Knows		4. Explain the scope & limitations of external applications in homoeopathy		Level 2 Understanding	Must know				
Hom.UG-HP-1.22.5			Does		5. Select the appropriate vehicle for preparation of external application.		Level 3 Problem solving	Must know				

Hom.UG-HP-1.22.6			Does		6. Select appropriate external application as per the case.		Level 3 Problem solving	Desirable to Know				
Hom.UG-HP.1.22.7			Does Shows how		7.Demonstrate the preparation of specific external applications	Psychomotor	Level 2 Control	Must know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning	1.DOPS 2. OSPE	Practical Examination	
Hom.UG-HP-1.22.8			Shows how Does		8.Demonstrate care and commitment in prepari	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 2.Procedural Skills Teaching	1.DOPS	Practical Examination	

					ng & dispensing of external application with accuracy				3. Problem Based Learning 4. Experiential learning 5. Practical Demonstration			

TOPIC: Metrology

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select appropriate scale of measurement in the homoeopathic pharmaceutical laboratory.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom.UG-HP-1.23.1	Problem solving Problem formulation Integration of Knowledge	Metrology	Knows	Must be able to select appropriate scale of measurement in the homoeopathic pharmaceutical laboratory.	1. Enumerate the different scales of measurement for preparation of homoeopathic drugs	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Problem Based learning 5. Flipped classroom	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ MCQ Voce SA Viv

	Synthesis and application of knowledge Classroom to lab tyransfer									6.SAQ's	
Hom.UG-HP-1.23.2			Knows		2. Explain the different scales of measurement for preparation of homoeopathic drugs		Level 2 Understanding	Must Know			
Hom.UG-HP-1.23.3			Does		3. Select appropriate scale of measurement for		Level 3	Must Know			

					preparation of homoeopathic drugs.		Problem solving				
Hom.UG-HP-1.23.4			Does		4. Measure the given quantity of the drug substance and vehicle for preparation of homoeopathic medicines	Psychomotor	Level 3 Automatism	Must know	1. Practical Demonstrations 2.Experiential Learning	1. DOPS 2. OSPE	Viva Voce Practical Examinations
Hom.UG-HP-1.23.5			Shows how		5.Show care while measuring the drugs for preparation of homoeopathic medicines	Affective	Level 2 Respond	Must know	1. Lecture Demonstration 2. Practical Demonstration	1.DOPS 2.OSPE	Theory Practical Examination

TOPIC: Potentisation& Scales of Potentisation

Learning Outcomes (LO): At the end of the topic of Potentisation, I-BHMS student must be able to:

1. Prepare Homoeopathic Medicine according to the scale.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's level	Must to know/ desirable toknow /Nice to know	Teaching - Learning Method	Assessment /Evaluation		Integration
										Formative	Summative	
Hom .UG-HP-1.24.1	Problem solution Integration of knowledge Practice based learnin	Potentisation	Knows	Prepare Homoeopathic Medicine according to the scale.	1. Explain the different scales of potentisation	Cognitive	Level 2 Understanding	Must Know	1.Lecture Demonstrations 2.Practical Demostrations 3. Small Group Discussions/Peer teaching (Think-Pair-Share, Jigsaw Strategy) 4. Problem based learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. SAQ's and LAQ's 5. MCQ's	LAQ SAQ MCQ Viva Voce	Organon Medicine-Horizontal

Hom.UG-HP-1.24.2	g and improvement Synthesis and Application of knowledge Classroom to lab Practical skills		Knows		2.Explain the two methods potentisation	Cognitive	Level 2 Understanding	Must Know	5. Student Seminars 6.Study Tour (Field Visit) 7. Integrated Teaching with Organon of Medicine	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. SAQ's and LAQ's 5. MCQ's		
Hom.UG-HP-1.24.3			Does		3. Select the appropriate vehicles used for potentisation.	Cognitive	Level 3 Problem solving	Must Know		DOPS Spotting OSPE Assessment of PBL		
Hom.UG-HP-1.24.4			Shows How		4. Demonstrate trituration according to the scale of potentisation.	Psychomotor	Level 3 AUTOMATISM	Must Know	1. Practical Demonstration 2.Procedural Skills Teaching	1.DOPS 2. OSPE	Practical Examination	

Hom.UG-HP-1.24.5			Shows How		5. Demonstrate succussion according to the scale of potentisation.	Psycho motor	Level 3 AUTOMATISM	Must Know	1. Practical Demonstration 2.Procedural Skills Teaching	1.DOPS 2. OSPE		
Hom.UG-HP-1.24.6			Shows How		6. Prepare 8X (Liq) potency from 6X (Triturate) (Jumping Potency)	Psycho motor	Level 3 AUTOMATISM	Must Know	1. Practical Demonstration 2.Procedural Skills Teaching	1.DOPS 2. OSPE		
Hom.UG-HP-1.24.7			Knows how Shoes how		7.Demonstrate care and commitment in preparing medicine with accuracy	Affective	Level 1 RECIEVING	Nice to Know	Practical Demonstration	DOPS	Practical Examination	

TOPIC: Old Methods of Preparation of Homoeopathic Drugs

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to prepare the homoeopathic medicines as per the old methods.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom.UG-HP-1.25.1	Problem solution Integration of Knowledge Synthesis and applicatio	Old Methods of Preparation of Homoeopathic Drugs	Knows	Must be able to prepare the homoeopathic medicines as per the	1. Classify Old Methods of preparation of homoeopathic drugs.	Cognitive	Level 2 Understanding	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ SAQ MCQ, Viva Voce(Formative &Summative)

Hom.UG-HP-1.25.2	n of knowledge Classroom to lab transfer Practice based learning and improvement		Knows	old methods	2.Enlist the fundamental rule, drug strength, drug: vehicle ratio nature of drug substances & 5 examples of drugs under Class I-IX according to Old methods.		Level 1 Recall	Must know	4. Student Seminars 5. Guest Lecture 6. Problem based learning 7. Flipped Classroom	6.SAQ's and LAQ's 7.Projects	
Hom.UG-HP-1.25.3			Knows		3.Explain the preparation &potentisation of mother tinctures under class I-IV according to the scale.		Level 2 Understanding	Must know			
Hom.UG-HP-1.25.4			Knows		4.Explain the preparation &potentisation of mother solutions under Class V & VI		Level 2 Understanding	Must know			

					according to the scale.						
Hom.UG-HP-1.25.5			Knows		5.Explain the potentisation of mother substances under Class VII, VIII & IX according to the scale.		Level 2 Understanding	Must know			
Hom.UG-HP-1.25.6			Does		6. Demonstrate the preparation of mother tincture under Class I-IV according to Old Methods.	Psycho motor	Level 3 Automatism	Must know	1. Practical Demonstrations 2. Procedural Skills Teaching	1. DOPS 2. OSPE	Practical Examination
Hom.UG-HP.1.25.7			Does		7. Demonstrate the potentisation of mother tincture		Level 3 Automatism	Must Know			

					according to the scale under Class I-IV according to Old Method.						
Hom.UG-HP-1.25.8			Does		8.Demonstrate the preparation of mother solution under Class V-VI according to Old Methods.		Level 3 Automatism	Must Know			
Hom.UG-HP-1.25.9			Does		9. Demonstrate the potentisation of mother solution according to the scale under Class V-VI according to Old Method		Level 3 Automatism	Must Know			

Hom.UG-HP-1.25.10			Does		10. Demonstrate the potentisation of mother substances according to the scale under Class VII, VIII & IX according to Old Method.		Level 3 Automatism	Must Know			
Hom.UG-HP-1.25.11			Shows how		11.Demonstrate care & commitment in preparing and dispensing medicine with accuracy according to the scale and Class under Old Methods.	Affective	Level 1 Receiving	Nice to know	1. Practical Demonstration	DOPS	Practical Examination

TOPIC: New Methods of Preparation of Homoeopathic Drugs

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to prepare the homoeopathic medicines as per the new methods.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
HomUG-HP-1.26.1	Problem solution Integration of Knowledge Synthesis and application of knowledge	New Methods of Preparation of Homoeopathic Drugs	Knows	Must be able to prepare the homoeopathic medicines as per the new methods	1. Define Maceration & Percolation.	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's 7.Projects	LAQ SAQ MCQ Viva Voce
HomUG-HP-1.26.2			Knows		2. Explain the process of maceration		Level 2 Understanding	Must know			
HomUG-HP-1.26.3			Knows		3.Explain the process of percolation		Level 2 Understanding	Must know			

HomUG-HP-1.26.4	Classroom to lab transfer Practice based learning and improvement		Knows how		4.Differentiate between old & new methods of preparation of homoeopathic drugs		Level 2 Understanding	Must know	7. Flipped Classroom 8. Videos		
HomUG-HP-1.26.5			Knows how		5.Differentiate between maceration & percolation in detail.		Level 2 Understanding	Must know			
HomUG-HP-1.26.6			Knows		6. Define the terms-merc, magma, menstrum		Recall	Must know			
HomUG-HP-1.26.7			Does		7. Demonstrate the preparation of mother tincture by maceration	Psychomotor	Level 2 Control	Must know	1. Practical Demonstrations 2. Procedural Skills Teaching 3.Experiential Learning	1.DOPS 2.OSPE 3.Projects	Practical Examination

HomUG-HP-1.26.8			Does		8.Demonstrate the preparation of mother solution by percolation		Level 2 Control	Must know			
HomUG-HP-1.26.9			Does		9. Demonstrate the towing of a percolator		Level 2 Control	Desirable to know			
HomUG-HP-1.26.10			Shows how		10.Demonstrate care &commitment in preparing of homoeopathic medicine with accuracy according	Affective	Level 1 Receiving	Nice to know	1. Lecture Demonstration 2. Practical Demonstration	DOPS	Practical Examination

					to the New methods of preparation of homoeopathic drugs.						

TOPIC: Pharmaconomy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to select appropriate route of administration of homoeopathic medicines.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does / Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

Hom UG-HP-1.27.1	Integration of Knowledge Synthesis and application of knowledge Classroom to Clinic transfer	Pharmaconomy	Knows	Must be able to select appropriate route of administration of homoeopathic medicines	1. Enumerate the different routes of administration of homoeopathic medicines.	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Flipped Classroom 6. Videos	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's 7.Projects	LAQ MCQ Voce	SAQ Viva
Hom UG-HP-1.27.2			Knows		2. Explain the different routes of administration of homoeopathic medicines.		Level 2 Understanding	Must know				
Hom UG-HP-1.27.3			Does		3. Select appropriate route of administration of homoeopathic medicines according to the case		Level 3 Problem solving	Desirable to know				
Hom UG-HP-					4. Administer the homoeopathi	Psychomotor	Level 2 Control	Nice to know	1. Practical Demonstrations	1. Case based assessment	Viva Voce	

1.27.4			Shows how		c medicine through appropriate route of administration according to the case				2.Experiential Learning 3. Projects 4. Case based Learning 5. Simulation teaching	2. Simulation based assessment		
Hom UG-HP-1.27.5			Knows how		5.Show care while administering homoeopathic medicine via different routes	Affective	Level 2 Respond	Desirable to know	1. Lecture Demonstration 2. Practical Demonstration 3. Case based Learning 4. Simulation teaching	Case based assessment 2. Simulation based assessment	LAQ MCQ Voce	SAC Viva

TOPIC: Dispensing of Medicines

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be to

1. Select an appropriate dosage form for dispensing of homoeopathic medicines.
2. Dispense homoeopathic medicine to patients.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/ Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-HP-1.28.1	Problem solution Integration of Knowledge Synthesis and Application of Knowledge Classroom to	Dispensing of homoeopathic medicines	Knows	Select an appropriate dosage form for dispensing of homoeopathic medicines. Dispense homoeopathic medicine to patients	1. Enumerate the different dosage forms.	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Problem based learning 6. Guest Lecture	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's	LAQ SA MCQ Viv Voce
Hom UG-HP-1.28.2			Knows		2. Explain the various modes for dispensing of solid dosage forms		Level 2 Understanding	Must know			

Hom UG-HP-1.28.3	OPD/IPD/ Pharmacy transfer		Knows		3. Explain the various modes for dispensing of liquid dosage forms		Level 2 Understanding	Must know			
Hom UG-HP-1.28.4			Knows		4. Enlist the vehicles used for dispensing of various dosage forms		Level 1 Recall	Must know			
Hom UG-HP-1.28.5			Knows		5. Explain the quality assurance while dispensing homoeopathic medicines.		Level 2 Understanding	Nice to know			
Hom UG-HP-1.28.6			Shows how Does		6. Demonstrate the dispensing of liquid dosage forms	Psychomotor	Level 2 Control	Must know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning	1.DOPS 2. OSPE	Practical Examination
Hom UG-HP-			Shows how Does		7. Demonstrate the dispensing		Level 2 Control	Must know			

1.28.7					of solid dosage forms						
Hom UG-HP-1.28.8			Does		8. Demonstrate care and commitment while dispensing of homoeopathic medicines.	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 3. Problem Based Learning	1.DOPS	Practical Examination

TOPIC: Placebo

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to indicate placebo in a particular case

Sr. No	Generic Competencies	Subject Area	Miller's Level Does / Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

Hom UG-HP-1.29.1	Problem solution Integration of Knowledge	Placebo	Knows	Must be able to indicate placebo in a particular case	1. Define Placebo	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Case based learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's, 7.Projects	LAQ MCQ Voce	SAQ Viva
Hom UG-HP-1.29.2	Synthesis and application of knowledge		Knows		2. Enumerate the vehicles used as placebo		Level 1 Recall	Must Know				
Hom UG-HP-1.29.3	Classroom to clinic transfer		Knows		3. Explain the indications of placebo		Level 2 Understanding	Must Know				
Hom UG-HP-1.29.4			Does		4.Select a placebo for a particular case		Level 3 Problem solving	Must Know				

TOPIC: Preservation of Homoeopathic Medicines

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to preserve homoeopathic medicines for long shell life.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-HP-1.30.1	Integration of Knowledge Synthesis and application of knowledge	Preservation of Homoeopathic medicine	Knows	Must be able to preserve homoeopathic medicines for long shell life	1. Enumerate the different methods of preservation of homoeopathic medicines	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's	LAQ SAQ MCQ Viva Voce
Hom UG-HP-1.30.2			Knows		2. Explain the individual method of preservation of homoeopathic medicine.		Level 2 Understanding	Must Know			

Hom UG-HP-1.30.3	Classroom to Clinic transfer Practice based learning and improvement		Does		3. Select an appropriate mode of preservation of homoeopathic medicines.		Level 3 Problem solving	Must Know		7.Projects	
Hom UG-HP-1.30.4			Does		4. Demonstrate the method of preservation of mother substances & preparations	Psychomotor	Level 2 Control	Desirable to Know	1. Practical Demonstrations 2. Procedural Skills Teaching 3.Experiential Learning 4. Projects	Viva Voce Practical Examination	Practical Examination
Hom UG-HP-1.30.5			Does		5. Demonstrate the method of preservation of potentised homoeopathic medicines			Desirable to Know			

Hom UG-HP-1.30.6			Does		6. Demonstrate the method of preservation of homoeopathic mother tinctures			Desirable to Know			
Hom UG-HP-1.30.7			Shows how		7.Show care & commitment while preserving homoeopathic preparations and potentised medicine.	Affective	Level 2 Respond	Nice to know	1. Lecture Demonstration 2. Practical Demonstration	SAQ, 2 marks question Projects Assignments Tutorials Viva Voce Practical Examination	Practical Examination

TOPIC: Pharmacovigilance and adverse drug reaction

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to identify any adverse drug reaction and comprehend the necessity of pharmacovigilance in homoeopathy

						Bloom's		Must to		Assessment /Evaluation

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Domain	Guilbert's levels	know/ desirable to know/Nice to know	Teaching - Learning Method	Formative	Summative
Hom UG-HP-1.31.1	Problem solution Integration of Knowledge Synthesis and application of knowledge Classroom to clinic transfer	Pharmacovigilance and adverse drug reaction	Knows	Must be able to identify any adverse drug reaction Comprehend the of pharmacovigilance in homoeopathy	1. Define adverse drug reaction	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Case based learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's, 7.Projects	LAQ SA MCQ Viv Voce
Hom UG-HP-1.31.2			Knows		2. Enumerate the types of adverse drug reactions		Level 1 Recall	Must Know			
Hom UG-HP-1.31.3			Knows		3. Explain the management of adverse drug reactions in homoeopathy		Level 2 Understanding	Must Know			
Hom UG-HP-1.31.4			Knows		4.Define pharmacovigilance		Level 1 Recall	Desirable to Know			

Hom UG-HP-1.31.5			Knows		5.Explain in detail the process of pharmacovigilance in Homoeopathy		Level 2 Understanding	Desirable to know			

TOPIC: Doctrine of Signature

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to apply doctrine of signature while selecting a Homoeopathic simillimum.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Domain	Guilbert's Levels	Must to know/ desirable to know/Nice toknow	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-HP-1.32.1	Problem formulation Integration of	Doctrine of Signature	Knows	Must be able to apply doctrine of signature while selecting a	1. Define Doctrine of Signature	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question	LAQ MCQ Voce SAC Viva
Hom UG-HP-1.32.2			Knows		2. Explain doctrine of signature with suitable examples		Level 2 Understanding	Must Know			

Hom UG-HP-1.32.3	Knowledge Synthesis and application of knowledge		Knows how	Homoeopathic similimum	3.Apply the logic behind doctrine of signature in patients showing the same signs particularly in one sided case.		Level 3 Problem solving	Nice to know	4. Student Seminars 7.Projects 5. Case based learning 8.Assessment of case 6.Case Simulation 9. Simulation assessment 7. Experiential Learning	6.SAQ's 7.Projects 8.Assessment of case 9. Simulation assessment	
Hom UG-HP-1.32.4			Shows how		4.Select a remedy for a one -sided case based on the doctrine of signature		Level 3 Problem solving	Nice to know			
Hom UG-HP-1.32.5			Shows hows		5.Demonstrate care, professionalism &commitment while prescribing on the basis of doctrine of signature	Affective	Level 2 Respond	Nice to know	1. Case based learning 2. Case Simulation 3.Experiential Learning	1. Assessment of case 2. Simulation assessment	Viva Voce

TOPIC: Drug Proving

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to prove a given drug on healthy human being

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's level	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation		Integration
										Method Formative	Type (Summative)	
HomUG-HP-1.33.1	Problem Solution Integration of Knowledge Synthesis and application of knowledge	Drug Proving	Knows	Proving a given drug on healthy human being	1. Define Drug Proving.	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 4. Quiz 5. Student Seminars 6. Guest Lecture	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5.SAQ's and LAQ's 6. 2 marks questions	LAQ SAQ MCQ Viva Voce	Horizontal with Organon of Medicine
HomUG-HP-1.33.2			Knows		2. Illustrate the qualities of an ideal prover.	Cognitive	Level 1 Recall	Must Know				
HomUG-HP-1.33.3			Shows how		3. Apply the selection criteria (inclusion & exclusion) for provers during drug proving.	Cognitive	Level 3 Problem Solving	Desirable to know				

HomUG-HP.1.33.4	Problem solving		Knows		4. Explain the methodology for drug proving.	Cognitive	Level 2 Understand	Must Know	7. Integrated Teaching with Organon of Medicine			
HomUG-HP-1.33.5			Does		5. Design the protocol for Drug Proving.	Cognitive	Level 3 Problem Solving	Nice to know	1. Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Role Plays 5. Experiential learning 6. Team based learning	1.Simulation based assessment	LAQ SAQ Viva Voce	
HomUG-HP-1.33.6			Does		6. Select ideal prover for drug proving		Level 3 Problem Solving	Desirable to know				
HomUG-HP-1.33.7			Does		7. Prepare the test substance for drug proving.	Psychomotor	Level 2 Control	Nice to know				
HomUG-HP-1.33.8			Does		8. Formulate the team for drug proving	Cognitive	Level 3 Problem Solving	Nice to know				
HomUG-HP-1.33.9			Does		9. Record the symptoms of drug proving	Psychomotor	Level 2 Control	Nice to know				

HomUG-HP-1.33.10			Does		10. Interprete the provers symptoms	Cognitive	Level 3 Problem solving	Nice to know				
HomUG-HP-1.33.11			Does		11. Translate the provers symptoms in Materia Medica language		Level 3 Problem solving	Nice to know				
HomUG-HP-1.33.12			Shows how		12. Show professionalism and care during drug proving towards the provers.	Affective	Level 2 Responding	Nice to know	1. Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Role Plays 5. Experiential learning 6. Team based learning	1.Simulation based assessment	Viva Voce	
HomUG-HP-1.33.13			Does		13. Value the privacy & integrity of the provers.		Level 3 Internalize	Nice to know				
HomUG-HP-1.33.14			Does		14. Value the consent of the prover.		Level 3 Internalize	Nice to know				

HomUG-HP-1.33.15			Does		15. Value the ethical considerations during drug proving.		Level 3 Internalize	Nice to know				

TOPIC: Posology

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to

1. Select a particular potency for a particular case.
2. Select a particular dose for a particular case.
3. Repeat the dose as per the criteria for repletion of doses.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable	Teaching - Learning Method	Assessment /Evaluation		Integration
										Formative	Summative	

			how/ Know					to know/ Nice to know				
HomUG-HP-1.34.1	Problem solution Integration of Knowledge Practice based learning and improvement Synthesis and application of knowledge	Posology	Knows	Selecting a particular potency for a particular case. Selecting a particular dose for a particular case. Repeating the dose as per the criteria for repletion of doses.	1.Define posology	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Integrated Teaching with Organon of Medicine 7. Case based learning 8. Case simulation learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's 7. Simulation based assessment 8. Case based assessment	LAQ SAQ MCQ Viva Voce	Horizontal with Organon of Medicine
HomUG-HP-1.34.2			Knows		2.Explain the criteria for selection of potency		Level 2 Understand	Must know				
HomUG-HP-1.34.3			Knows how		3.Apply the criteria for selection of potency for a particular case.		Level 3 Problem solving	Desirable to know				

HomUG-HP-1.34.4	Classroom to OPD/IPD transfer		Knows		4. Enlist the different types of doses		Level 1 Recall	Must know				
HomUG-HP-1.34.5			Knows		5. Explain the criteria for repetition of doses.		Level 2 Understanding	Must know				
HomUG-HP-1.34.6			Shows how		6.Apply the criteria for repetetion of doses for a particular case.		Level 3 Problem Solving	Desirable to know				
HomUG-HP-1.34.7			Does		7. Choose the correct potency for a particular case		Level 3 Problem Solving	Desirable to know	1. Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Team based learning	1.Simulation based assessment 2. Case based assessment 3. OSPE	LAQ SAQ MCQ Practical Examination	

									6.Case based learning 7. Case simulation learning			
HomUG-HP-1.34.8			Does		8. Choose the proper dosage for a particular case		Level 3 Problem Solving	Desirable to know				
HomUG-HP-1.34.9			Does		9. Design the dosage and repetition for a particular case		Level 3 Problem Solving	Nice to know				
HomUG-HP-1.34.10			Shows how		10.Show professionalism and care while selection of potency & dose.	Affective	Level 2 Respond	Nice to know	1.Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Team based learning 6. Case based learning	1.Simulation based assessment	Viva Voce	
HomUG-HP-1.34.11			Shows how		11. Value the privacy & integrity of the patient/case		Level 3 Internalize	Nice to know				

									7. Case simulation learning			
HomUG-HP-1.34.12			Shows how		12. Value the ethical considerations during selection of potency, dose and repetition of doses		Level 3 Internalize	Nice to know				
HomUG-HP-1.34.13			Shows how		13. Value the importance of rational prescription		Level 3 Internalize	Nice to know				

TOPIC: Prescription Writing

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must have knowledge of writing an ideal prescription

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Level	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-HP-1.35.1	Integration of Knowledge Practice based learning and improvement Synthesis and application of knowledge	Prescription Writing	Knows	Writing an ideal prescription	1.Define Prescription writing.	Cognitive	Level 1 Recall	Must Know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Case based learning	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's	LAQ SAQ MCQ Viva Voce
Hom UG-HP-1.35.2			Knows		2.Explain the parts of an ideal prescription.		Level 2 Understanding	Must Know			
Hom UG-HP-1.35.3			Knows		3. List the abbreviations used in prescription writing with meaning.		Level 1 Recall	Must Know			

Hom UG-HP-1.35.4	Problem solution Classroom to OPD/IPD Transfer		Knows		4. Explain the advantages of prescription to the patients and to the physician.		Level 2 Understanding	Must Know	7. Case simulation learning		
Hom UG-HP-1.35.5			Shows how		5. Critically analyse a prescription for any faults.		Level 3 Problem solving	Nice to know			
Hom UG-HP-1.35.6			Does		6. Write an ideal prescription	Psychomotor	Level 2 Control	Must know	1. Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Team based learning 6.Case based learning	1.Simulation based assessment 2. Case based assessment 3. OSPE	Practical Examination
Hom UG-HP-1.35.7			Shows how		7. Criticize a wrong prescription	Cognitive	Level 3 Problem solving	Nice to know			

									7. Case simulation learning 8. Practical Demonstration		
Hom UG-HP-1.35.8			Shows how		8.Show professionalism and commitment while writing a prescription with accuracy.	Affective	Level 2 Respond	Nice to know	1.Lecture Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning 4. Experiential learning 5. Team based learning 6. Case based learning 7. Case simulation learning 8. Practical Demonstration	1.Simulation based assessment	Practical Examination
Hom UG-HP-1.35.9					9. Value the privacy & integrity of the prescription.		Level 3 Internalize	Nice to know			
Hom UG-HP-					10. Value the ethical considerations during		Level 3 Internalize	Nice to know			

1.35.10					writing a prescription						
Hom UG-HP-1.35.11					11. Value the importance of rational prescription		Level 3 Internalize	Nice to know			

TOPIC: Legislation

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to follow and practice ethically all the laws that govern homoeopathic pharmacy.

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative

Hom UG-HP-1.36.1	Integration of Knowledge Synthesis and Application of knowledge Problem solution	Legislation	Knows	Must be able to follow and practice ethically all the laws that govern homoeopathic pharmacy.	1.List all the acts that govern the legal aspects of homoeopathic pharmacy.	Cognitive	Level 1 Recall	Must know	1.Lecture Demonstrations 2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Guest Lecture 6. Problem based learning 7. Flipped Classroom	1.Structured Oral Examination 2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's and LAQ's	LAQ Voce	Viva
Hom UHP-1.36.2			Knows		2. Illustrate the provisions under the Drugs & Cosmetic Act		Level 2 Understanding	Must know				
Hom UG-HP-1.36.3			Knows		3. Illustrate the provisions under the Schedule M1		Level 2 Understanding	Must know				
Hom UG-HP-1.36.4			Knows		4. Illustrate the provisions under the Drugs & Magic Remedies Act		Level 2 Understanding	Must know				
Hom UG-HP-1.36.5			Knows		5. Illustrate the provisions under the Medicinal & Toilet Preparation Act		Level 2 Understanding	Must know				

Hom UG-HP-1.36.6			Knows		6. Illustrate the provisions under the Dangerous Drugs Act		Level 2 Understanding	Must know			
Hom UG-HP-1.36.7			Knows		7. Illustrate the provisions under the Prevention of Illicit Traffic in Narcotic Drugs & Psychotropic Substances Act		Level 2 Understanding	Must know			
Hom UG-HP-1.36.8			Knows		8. Illustrate the provisions under the Homoeopathic Central Council Act		Level 2 Understanding	Must know			
Hom UG-HP-1.36.9			Does Shows how		9.Demonstrate the labelling of homoeopathic medicine according to Part IX of the Drugs &	Psychomotor	Level 2 Control	Must know	1.Practical Demonstration 2.Procedural Skills Teaching 3. Problem Based Learning	1.DOPS 2. OSPE	LAQ Practical Examination

					Cosmetic Act 1940				4. Experiential learning		
Hom UG-HP-1.36.10			Knows		10.Demonstrate care and commitment and abide by the provisions laid down in the various acts.	Affective	Level 1 Receiving	Nice to know	1.Lecture Demonstration 3. Problem Based Learning	Role Play Assessment	Viva Voce

TOPIC: Drug Action

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to differentiate the different mechanisms of drug action of homoeopathic medicines

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
Hom UG-HP-1.37.1	Integration of Knowledge	Drug Action	Knows how	Must be able to differentiate the different mechanisms of drug	1. Classify the different types of drug action.	Cognitive	Level 2 Understanding	Nice to Know	1.Lecture Demonstrations 2. Small Group Discussions/	1.Structured Oral Examination 2. Tutorials 3. Assignments	LAQ SA MCQ Practical Examination Viva Voce

Hom UG-HP-1.37.2	Synthesis and application of knowledge		Knows	action of homoeopathic medicines	2. Explain the individual family drug action according to their sphere of action.		Level 2 Understanding	Desirable to Know	Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Flipped Classroom 6. Videos 7. Integrated Teaching	4. MCQ's 5. 2 marks question 6.SAQ's 7.Projects 8. Spotting	
Hom UG-HP-1.37.3	Classroom to Clinic transfer		Knows		3. Explain the individual family drug action according to nature of drug & family relationship.		Level 2 Understanding	Desirable to Know			
Hom UG-HP-1.37.4			Does		4. Analyze the action of drug on patients.	Cognitive	Level 3 Problem solving	Nice to know	1. Practical Demonstrations 2.Experiential Learning 3. Projects	1. Spotting 2. Pharmaco-logical action of 30 drugs as specified in journal 3. Projects	----------
Hom UG-HP-1.37.5			Does		5. Co-relate the action of drugs with the family characteristics.			Nice to know			

Hom UG-HP-1.37.6			Knows		6.Show care in prescribing homoeopathic medicine based on action of drugs and drug relationships.	Affective	Level 2 Respond	Must know	1. Lecture 2. Integrated teaching of Pharmacological drug action with Materia Medica	Journal Assessment	----------

TOPIC: Relation of Pharmacy with Materia Medica, Anatomy, Physiology

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to correlate homoeopathic pharmacy with Materia Medica, Anatomy and Physiology

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's Levels	Must to know/ desirable to know/Nice to know	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
HomUG-HP 1.38.1	Problem formulation	Relation of Pharmacy with	Knows	Must be able to correlate homoeop	1. Explain the correlation of homoeopathic pharmacy with	Cognitive	Level 2 Understanding	Desirable to Know	1.Lecture Demonstrations	1.Structured Oral Examination	SAQ Viva Voce

	Integration of Knowledge Synthesis and application of knowledge	Materia Medica		athic pharmacy with material medica, Anatomy and Physiology	the basics of Homoeopathic Materia Medica.				2. Small Group Discussions/ Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Quiz 4. Student Seminars 5. Flipped Classroom	2. Tutorials 3. Assignments 4. MCQ's 5. 2 marks question 6.SAQ's, LAQ's 7.Projects	
HomUG-HP-1.38.2			Knows		2. Explain the correlation of homoeopathic pharmacy with the basics of Anatomy			Desirable to Know			
HomUG-HP-1.38.3			Knows		3. Explain the correlation of homoeopathic pharmacy and Physiology			Desirable to Know			
HomUG-HP-1.38.4			Knows how		4.Apply the principles of posology during case taking after selection of similimum based on knowledge of Homoeopathic	Cognitive	Level 3 Problem Solving	Desirable to know	1. Practical Demonstration 2. Lecture Demonstration 3. Experimen	1. DOPS 2. OSPE 3. Evaluation of projects 4. Evaluation of case	-------

					Materia Medica.				tal Research projects 4. Case based learning 5. Problem based learning 6. Case simulation	based learning 5. Evaluation of PBL 6. Evaluation of Case simulation	
HomUG-HP-1.38.5			Knows how		5. Apply the knowledge of drug action based on familial relationship and remedy relationship as noted in Homoeopathic Materia Medica and organ affection with anatomy			Desirable to know			
HomUG-HP-1.38.6			Knows how		6. Apply the knowledge of sources of drugs and collection of drugs while preparation of homoeopathic medicines according to			Desirable to know			

					the scale of potentisation.						
HomUG-HP-1.38.7			Knows how		7. Apply the knowledge of pharmacological action of drugs with the normal physiology of human body			Desirable to know			
HomUG-HP-1.38.8			Knows how		8.Demonstrate care, professionalism & commitment & follow all the guidelines meticulously as given in 6th edition of Organon of medicine while selecting a particular homoeopathic medicine in a particular potency.	Affective	Level 1 Receiving	Nice to know	1. Practical Demonstration 2. Lecture Demonstration 3. Experimental Research projects 4. Case based learning	1. DOPS 2. OSPE 3. Evaluation of projects 4. Evaluation of case based learning 5. Evaluation of PBL 6. Evaluation	Viva Voce

									5. Problem based learning 6. Case simulation	of Case simulation	
HomUG-HP-1.38.9					9. Demonstrate care, professionalism & commitment & follow all the guidelines meticulously as given in 6th edition of Organon of medicine while preparation of homoeopathic medicine according to the scale of potentisation.						

HomUG-HP-1.38.10					10. Demonstrate care, professionalism & commitment & follow all the guidelines meticulously as given in 6th edition of Organon of medicine while prescribing a particular external application for a particular case.						
HomUG-HP-1.38.11					11. Should ensure that all the resources are used to the fullest without any wastage while preparing						

					homoeopathic medicine.						

TOPIC: Recent advancements and scope of research in Homoeopathic Pharmacy

Learning Outcomes (LO):

At the end of the topic, I-BHMS student must be able to undertake a short term research in Homoeopathic Pharmacy

Sr. No	Generic Competencies	Subject Area	Miller's Level Does/ Shows how/ Knows how/ Know	Specific Competencies	Specific Learning Objectives	Bloom's Domain	Guilbert's levels	Must to know/ desirable to know/Nice toknow	Teaching - Learning Method	Assessment /Evaluation	
										Formative	Summative
HomUG-HP-1.39.1	Problem solution	Recent advancements and scope of research in	Knows	Must be able to undertake a short term research in	1.Enumerate the types of research in homoeopathic pharmacy	Cognitive	Level 1 Recall	Nice to know	1.Lecture Demonstrations 2. Small Group Discussions/	1.Structured Oral Examination 2. Assignments 3. MCQ's	---------

	Integration of Knowledge Synthesis and application of knowledge Classroom to lab transfer	Homoeopathic Pharmacy		Homoeopathic Pharmacy					Peer teaching (Think-Pair-Share, Jigsaw Strategy) 3. Visit to research laboratories	4.SAQ's	
HomUG-HP-1.39.2			Knows		2.Explain the recent advancements in the field of homoeopathic pharmacy		Level 2 Understanding	Nice to Know			
HomUG-HP-1.39.3			Does		3.Design the protocol for a short term research proposal in homoeopathic pharmacy		Level 3 Problem solving	Nice to know			

Non-Lecture Activities

1. Collection of 30 drugs for herbarium
2. Visit to a Large-scale manufacturing unit of Homoeopathic medicine (GMP compliant).
3. Visit to a Medicinal Plant /Botanical Garden & shall keep details Visit report
4. Clinical Class: Visit to IPD, OPD to take note on prescriptions as per Homoeopathic Principles and keep record

5. Visit to Hospital dispensing section to observe & gain knowledge on Dispensing techniques & Keep Records

8.PRACTICAL TOPICS

Homoeopathic Pharmacy Practicals	
Sr No.	**Particulars of Experiments**
1	Estimation of size of globules
2	Medication of globules (Small Scale)
3	Purity test of Sugar of milk
4	Purity test of water
5	Purity test of Ethyl alcohol
6	Determination of Specific gravity of a given liquid Vehicle & identifying the same.
7	Preparation of dispensing alcohol from strong alcohol.
8	Preparation of dilute alcohol from strong alcohol.
9	Trituration of drug in Old Method (One each of Class VII, VIII & IX)
10	Trituration of one drug as per HPI
11	Succussion in decimal scale from Mother Tincture (Prepared in Old Method) to 3X potency.
12	Succussion in decimal scale from Mother Tincture (Prepared in New Method) to 3X potency
13	Succussion in centesimal scale from Mother Tincture (Prepared in Old Method) to 3C
14	Succussion in centesimal scale from Mother Tincture (Prepared in New Method) to 3C
15	Conversion of Trituration to liquid potency: Decimal scale 6X to 8X potency.

16	Conversion of Trituration to liquid potency: Centesimal scale 3C to 4C potency.
17	Preparation of 0/2 potency (Solid form) (LM scale) of 1 Drug from 3rd Degree Trituration.
18	Preparation of external applications – Lotion
19	Preparation of external applications – Glycerol
20	Preparation of external applications – Liniment
21	Preparation of external applications – Ointment
22	Writing of prescription & Dispensing the Medicine in Water with preparation of Doses
23	Writing of prescription & Dispensing the Medicine in Sugar of Milk with Preparation of Doses
24	Preparation of mother tinctures according to Old Hahnemannian method (Class I, II, III, IV)
25	Preparation of mother solutions according to Old Hahnemannian method (Class Va, Vb, VIa, VIb)

Demonstration

1. Homoeopathic pharmaceutical instruments and appliances with their cleaning (List provided in Appendix C)

2. Estimation of moisture content using water bath

3. Paper chromatography & TLC of any mother tincture

4. Laboratory methods – Sublimation, distillation, decantation, filtration, crystallization.

5. Preparation of mother tincture – Maceration and Percolation

6. Study & demonstration of Drug Substances (listed in Appendix B)-

i)Macroscopic Characteristic (Any 15)

ii) Microscopic characteristic (Any 05)

7. Study & demonstration of vehicles (Solid, Liquid & Semi solid – as available)

8. Microscopical study of Trituration (One drug up to 3X Potency)

9. Medication of Globule (Large Scale)

Activities

1. Collection of 30 drugs for herbarium
2. Visit to a Large-scale manufacturing unit of Homoeopathic medicine (GMP compliant).
3. Visit to a Medicinal Plant /Botanical Garden & shall keep details Visit report
4. Clinical Class: Visit to IPD, OPD to take note on prescriptions as per Homoeopathic Principles &keep record
5. Visit to Hospital dispensing section to observe & gain knowledge on Dispensing techniques & Keep Records

Demonstration

1. Homoeopathic pharmaceutical instruments and appliances with their cleaning (List provided in Appendix C)-06 Hours
2. Estimation of moisture content using water bath-02 Hours
3. Paper chromatography & TLC of any mother tincture-04 Hours
4. Laboratory methods – Sublimation, distillation, decantation, filtration, crystallization.-04 Hours
5. Preparation of mother tincture – Maceration and Percolation- 04 Hours
6. Study & demonstration of Drug Substances (listed in Appendix B)- 10 Hours

i)Macroscopic Characteristic (Any 15)

ii) Microscopic characteristic (Any 05)

7. Study & demonstration of vehicles (Solid, Liquid & Semi solid – as available)- 02 Hours
8. Microscopical study of Trituration (One drug up to 3X Potency)-02 Hours
9. Medication of Globule (Large Scale)-1 Hour

Clinical Hospital Work – Maintain Record (Activities/Posting in Dispensing Section, Prescriptions based on Homoeopathic Principles in IPD/OPD) – Record to be maintained as per format in Appendix G- 20 Hours

Seminar – Maintain Record on Seminar Presentation on Topics of Homoeopathic Pharmacy as assigned- 07 Hours

9. ASSESSMENT

Assessment Summary

9A- Number of papers and Mark Distribution

Sr. No.	Course Code	Papers	Theory	Practical	Viva Voce	Internal Assessment-Practical	Electives Grade Obtained		Grand Total
1	HomUG-HP	1	100	50	40	10			100

9B - Scheme of Assessment (formative and Summative)

Sr. No	**Professional Course**	**1st term (1-6 Months)**			**2nd Term (7-12 Months)**			**3rd Term (13-18 Months)**	
1	First Professional BHMS	1st PA	1ST TT		2nd PA	2ND TT		3rd PA	UE
		10 Marks Practical/Viva	50 Marks Theory	50 Marks Practical/ Viva	10 Marks Practical/Viva	50 Marks Theory	50 Marks Practical/ Viva	10 Marks Practical/Viva	

For Internal assessment, Only Practical/Viva marks will be considered. Theory marks will not be counted.

Method of Calculation of Internal Assessment Marks for Final University Examination:

PA1 Practical/Viva (10 Marks) **A**	PA2 Practical/Viva (10 Marks) **B**	PA3 Practical/Viva (10 Marks) **C**	Periodical Assessment Average PA1+PA2+PA3/3 **D**	TT1 Practical/Viva (50 Marks) **E**	TT2 Practical/Viva (50 Marks) **F**	Terminal Test Average TT1+TT2/100*10 **G**	Final Internal Assessment Marks **D+G/2**

PA- Periodical Assessment **TT**- Terminal Test **UE**- University Examination

9C - Evaluation Methods for Periodical Assessment

Sr. No	**Evaluation Criteria**
1	Practical Performance
2	Viva Voce

9 D- Paper Layout

MCQ	**10 marks**
SAQ	**50 marks**
LAQ	**40 marks**

9 E– I - Distribution of Theory exam

Sr. No	**Paper**			**D** **Type of Questions** **"Yes" can be asked.** **"No" should not be asked.**		
	A **List of Topics**	**B** **Term**	**C** **Marks**	**MCQ** **(1 Mark)**	**SAQ** **(5 Marks)**	**LAQ** **(10 Marks)**
1	General Concepts and Orientation	I	Refer Next Table	Yes	Yes	No
2	Raw Material: Drugs and Vehicles	I		Yes	Yes	Yes
3	Homoeopathic Pharmaceutics	II		Yes	Yes	Yes
4	Pharmacodynamics	III		Yes	Yes	Yes
5	Quality Control	II		No	Yes	No
6	Legislations pertaining to Homoeopathic Pharmacy	III		No	No	Yes
7	Homoeopathic Pharmacy - Relationships	III		No	Yes	No

9 E – II - Theme table

Theme*	**Topics**	**Term**	**Marks**	**MCQ's**	**SAQ's**	**LAQ's**

A	General Concepts and Orientation	I	11	Yes	Yes	No
B	Raw Material: Drugs and Vehicles	I	25	Yes	Yes	Yes
C	Homoeopathic Pharmaceutics	II	23	Yes	Yes	Yes
D	Pharmacodynamics	III	16	Yes	Yes	Yes
E	Quality Control	II	10	No	Yes	No
F	Legislations pertaining to Homoeopathic Pharmacy	III	10	No	No	Yes
G	Homoeopathic Pharmacy - Relationships	III	05	No	Yes	No

9 F Question paper Blueprint

A **Question Serial Number**	**B** **Type of Question**	**Question Paper Format** **(Refer table 7 F II Theme table for themes)**
Q1	Multiple choice Questions (MCQ) 10 Questions 1 mark each All compulsory Must know part: 6 MCQ Desirable to know: 2 MCQ. Nice to know: 2 MCQ	1. Theme A 2. Theme B 3. Theme B 4. Theme B 5. Theme B 6. Theme B 7. Theme C 8. Theme C 9. Theme C 10. Theme D
Q2	Short answer Questions (SAQ) 10 Questions 5 Marks Each All compulsory Must know part: 9 SAQ Desirable to know: 1 SAQ	1. Theme A 2. Theme A 3. Theme B 4.Theme B 5. Theme C 6. Theme C 7. Theme D

	Nice to know: Nil	8. Theme E 9. Theme E 10. Theme G
Q3	Long answer Questions (LAQ) 4 Questions 10 marks each All compulsory All questions on must know No Questions on Nice to know and Desirable to know	1. Theme B 2. Theme C 3. Theme D 4. Theme F

9 G - Distribution of Practical Exam

Practical, Viva& Internal Assessment→ 100 marks

Spotting	20 marks
Experiment	20 marks
Journal	10 marks

Viva voce	40 marks
Internal assessment	10 marks

10.LIST OF RECOMMENDED BOOKS

Text Books

1. Dr. Partha Mandal &Dr. Biman Mandal, A Textbook of Homoeopathic Pharmacy, Revised and Enlarged 3rd Edition, 2012, New Central Book Agency Publishers.
2. Dr.Sumit Goel, Art and Science of Homoeopathic Pharmacy, 4TH Enlarged Revised Edition, 2021, IBPP Publishers.
3. Dr. D.D. Banerjee, Augmented Textbook of Homoeopathic Pharmacy, 2 nd Edition, 2012, B. Jain Publishers.
4. Dr. K.P. Mujumdar, Textbook of Homoeopathic Pharmacy, 2013, New Central Book Agency Publishers

Reference Texts

1.Banerjee SK & Sinha N. (Reprint edition, 1993). A Treatise on Homoeopathic Pharmacy. B Jain Publishers, New Delhi.

2. Govt. of India, Ministry of Health & Family Welfare, New Delhi (1971 to 2006). Homoeopathic Pharmacopoeia of India (1-9 Vol.)

3. Hughes R (Reprint edition, 1999). A Manual of Pharmacodynamics. B Jain Publishers, New Delhi.

4. Dr. P.N. Verma &Dr. (Mrs.) InduVaid, Encyclopaedia of Homoeopathic Pharmacopoeia, Vol- I,II,III, Edition 2002,B. Jain Publishers.

APPENDIX – A			
List of drugs included in the syllabus of Homoeopathic Pharmacy for study of Pharmacological action: -			
1.	Aconitum Napellus	16.	Glonoinum
2.	Adonis vernalis	17.	Hydrastis Canadensis
3.	Allium cepa	18.	Hyoscyamus niger
4.	Argentum Nitricum	19.	Kali bichromicum
5.	Arsenicum album	20.	Lachesis
6.	Atropa Belladonna	21.	Lithium carbonicum
7.	Cactus grandifloras	22.	Mercurius corrosivus
8.	Cantharis vesicatoria	23.	Naja tripudians

9.	Cannabis indica	24.	Nitricum acidum
10.	Cannabis sativa	25.	Nux vomica
11.	Cinchona officinalis	26.	Passiflora incarnate
12.	Coffea cruda	27.	Stannum metallicum
13.	Crataegus oxyacantha	28.	Stramonium
14.	Crotalus horridus	29.	Symphytum officinale
15.	Gelsemium sempervirens	30.	Tabacum

APPENDIX – B

List of drugs for identification

i. **Vegetable Kingdom**

1. Aegle folia
2. Anacardium orientale
3. Andrographis paniculata
4. Calendula officianlis
5. Cassia sophera
6. Cinchona officinalis
7. Cocculus indicus
8. Coffea cruda
9. Colocynthis
10. Crocus sativa

11.	Croton tiglium
12.	Cynodon dactylon
13.	Ficus religiosa
14.	Holarrhenaantidysenterica
15.	Hydrocotyle asiatica
16.	Justicia adhatoda
17.	Lobelia inflata
18.	Nux vomica
19.	Ocimum sanctum
20.	Opium
21.	Rauwolfia serpentina
22.	Rheum
23.	Saraca indica
24.	Senna
25.	Stramonium
26.	Vinca minor
ii.	**Chemicals or Minerals**
1.	Acetic acid
2.	Alumina
3.	Argentum Metallicum
4.	Argentum Nitricum

5. Arsenicum Album
6. Calcarea Carbonica
7. Carbo Vegetabilis
8. Graphites
9. Magnesium Phosphoric
10. Natrum Muriaticum
11. Sulphur

iii. **Animal Kingdom**

1. Apis mellifica
2. Blatta orientalis
3. Formica rufa
4. Sepia
5. Tarentula cubensis

Appendix C			
List of Instrument & Appliances for Demonstration & Study			
Crucible with lid	Test Tube	Tripod stand	Hot Air Oven
Porcelain Basin	Conical Flask	Wire gauze	Water bath

Mortar & Pestle Porcelain	Volumetric flask	Spatula	Macerating Jar
Ointment Slab	Minim glass	Leather pad	Percolator
Chemical Balance	Thermometer	Stop watch	Microscope
Hydrometer	Mortar & Pestle - Glass	Chopping Board	pH Meter
Alcoholometer	Glass Phials	Chopping Knife	Burette
Lactometer	Pyknometer	Sieve	Pipette
Spoon	Measuring Cylinder	Tincture Press	Dropper
Beaker	Graduated Conical Flask	Funnel	Glass Rod

Appendix – D (List of Important Vehicles for Study)

Appendix – D (List of Important Vehicles for Study)		
Solid	**Liquid**	**Semisolid**
Sugar of Milk	Water	Vaseline
Globules	Ethyl Alcohol	Beeswax
Tablets	Glycerine	Lanolin
Cane Sugar	Olive Oil	Spermaceti
	Simple Syrup	Isin glass
	Lavender Oil, Sesame Oil, Rosemary Oil, Almond Oil	

Appendix E
Format for Maintaining Record on visit to Homoeopathic Manufactory (GMP Compliant)
Date of Visit No. of Visiting Students & Teaching Faculty Name of Teaching Faculty Detail of the Instructor/s at the Manufactory How the Tour was arranged Name & Location of the Homoeopathic Manufactory History about the Manufactory Different Sections of the manufactory with its working process Activities of R&D Dept How the visit helped in correlation with topics studied in Theory Conclusion **(Any other related information, not mentioned in format, if required can be included)**

Appendix F
Format for Maintaining Record on visit to Medicinal Plant Garden

Date of the Visit No. of visiting Students & Teaching Faculty Name of Teaching Faculty Detail of Instructor/s How the Tour was arranged Name & Location of the Medicinal Plant Garden History & about the Medicinal Plant Garden A list Medicinal Plants seen with brief description, Conclusion

Appendix G
Format for maintaining record on Hospital Activities (Visit to OPD/IPD & Dispensing Section)
Record on Prescriptions based on Homoeopathic Principles in IPD/OPD No of Cases: Total 10 cases (5 Acute, 5 Chronic) Format - Patient ID Complaint Diagnosis Details of 1st Prescription – Name of Medicine, Potency, Dose with its Repetition, Second Prescription (if Record is available)

Conclusion at the end of Acute & Chronic Cases on Lessons learnt on Homoeopathic Principles
Record on Activities/Posting in Hospital Dispensing Section Total No. of Patients Date wise, Sl No as per Prescription Register, Dosage form- Liquid/solid, Name of Vehicle used, Medication Process etc Conclusion at the end on Lessons learnt on Homoeopathic Dispensing Techniques

Appendix H
Format for Maintaining record on Departmental Seminars

Maintenance of Record on Seminar Presentation on Topics of Homoeopathic Pharmacy as assigned
Circular/Notice of Departmental Seminar
Title of Topic for Presentation,
Date
Presented by Name of Student/s
Brief Report on the Seminar
Any New Information provided by the Speakers
Rating on a Scale of 10
No of Students & Faculty Members attending the Seminar
Photos
Signed by the Departmental Head

11.LIST OF CONTRIBUTORS

Dr.Parth Aphale

Professor & H.O.D. Department of Homoeopathic Pharmacy, Dr. D.Y. Patil Homoeopathic Medical College & Research Centre, Pimpri, Pune-411018

DR KAUSHIK DEB DAS

Professor & Head, Dept of Homoeopathic PharmacyCollege - The Calcutta Homoeopathic Medical College & HospitalKolkata , WB

DR RAM JYOTHIS

ANSSHMC, Kottayam, Kerala

DR VIVEK SAKTHIDHARAN

Father Muller Homoeopathic Medical College, Karnataka

COMPETENCY BASED DYNAMIC CURRICULUM FOR

FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(HOMOEOPATHIC REPERTORY and CASE TAKING)

HOMOEOPATHY EDUCATION BOARD

NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058

HOMOEOPATHIC REPERTORY and CASE TAKING (I PROFESSIONAL BHMS)

1. COURSE CODE: HomUG-R-I

SUBJECT NAME: HOMOEOPATHIC REPERTORY and CASE TAKING

INDEX

S. No	Description	Page Number
1	Preamble	02
2	Program Outcomes (PO)	03
3	Course outcomes (CO)	04
4	Teaching Hours	05
5	Course Contents of Hom UG-Rep-I	06
6	Teaching Learning methods	08
7	Content mapping-Learning Objectives (Theory) of Course HomUG-Rep-I	09
8	List of Practical Topics	15
9	List of Recommended Books	16
10	List of Contributors	17

1.PREAMBLE

The Homoeopathic Materia Medica has expanded manifold since the proving of "Cinchona Bark" by Dr. Samuel Hahnemann and today we have over five thousand remedies in the Materia Medica. It is impossible for any human mind to memorise all the symptoms of each drug and to recall those symptoms while prescribing. Therefore, the need of indexing of these symptoms along with the drugs producing those symptoms were felt by Dr. Samuel Hahnemann himself and subsequently by other homoeopaths for prescribing at the bedside of the patient.

Homoeopathic Repertory is a Dictionary or Storehouse or an index to the huge mass of symptoms of the Homoeopathic Materia Medica. The repertory is organized in a practical form indicating the relative gradation of drugs. Repertories not only contain symptoms of proving but also clinical and pathological symptoms found in the Homoeopathic Materia Medica. Repertories serve as an instrument at the disposal of the physician for sifting through the maze of symptoms of the vast Homoeopathic Materia Medica.

Repertories aim at simplifying the work of the physician to find the indicated remedy by eliminating the non-indicated remedies**.** Repertorisation is not the end but a means to arrive to the simillimum and reference to Homoeopathic Materia Medica based on sound principles of Philosophy is the final court of appeal.

Each repertory has been compiled on the basis of distinct philosophy, structure and utility. In order to use these instruments effectively, one must understand thoroughly its conceptual base, construction and utility and limitations. Even though there are a number of repertories, the student at the under graduate level is expected to learn the philosophy and application of basic core repertories namely Kent, Boger's Boenninghausen Characteristics and Repertory and Boenninghausen's Therapeutic Pocket Book. The subject of Repertory must not be taught in isolation but must be taught in horizontal integration with Anatomy, Physiology in I BHMS; Pathology, Surgery, Gynaecology and Practice of Medicine in II BHMS; Surgery, Gynaecology, Practice of Medicine in III BHMS and Practice of Medicine in IV BHMS and vertically integrated with Homoeopathic Materia Medica and Organon and Homoeopathic Philosophy in all the years. Integrated teaching in all the years will help the student to grasp and understand the subjects better and connect repertory to all other subjects.

Similarly, case taking demands virtual integration of all the subjects taught from the Ist BHMS to IV BHMS in the consulting room or at the bedside. The physician can never say that he has learnt all that is to the case taking process. Every new patient has a new lesson to teach.

The advent of computerization and resulting software has opened up vast newer avenues to collate and correlate the vast information found in the Homoeopathic Materia Medica through the repertories. Continued exploration of these connections will generate new data, newer repertories and the newer application to existing or newer illnesses.

2.PROGRAMME OUTCOMES:

At the end of the course of the undergraduate studies, the homoeopathic physician must

1. Develop the knowledge, skills, abilities and confidence as a primary care homoeopathic practitioner to attend to the health needs of the community in a holistic manner
2. Correctly assess and clinically diagnose common clinical conditions prevalent in the community from time to time
3. Identify and incorporate the socio-demographic, psychological, cultural, environmental & economic factors affecting health and disease in clinical work
4. Recognize the scope and limitation of homoeopathy in order to apply Homoeopathic principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community
5. Be willing and able to practice homoeopathy as per medical ethics and professionalism.
6. Discern the scope and relevance of other systems of medical practice for rational use of cross referrals and role of life saving measures to address clinical emergencies
7. Develop the capacity for critical thinking, self-reflection and a research orientation as required for developing evidence based homoeopathic practice.
8. Develop an aptitude for lifelong learning to be able to meet the changing demands of clinical practice
9. Develop the necessary communication skills and enabling attitudes to work as a responsible team member in various healthcare settings and contribute towards the larger goals of national health policies such as school health, community health and environmental conservation.

3.COURSE OUTCOMES (CO):

At the end of course in Repertory, the Final BHMS student shall be able to

1. Describe the philosophical background, construction, utility and limitations of various repertories
2. Demonstrate case taking and show empathy with the patient and family during case taking
3. Demonstrate various steps for systematic case processing viz. analysis of case, evaluation of symptoms as per Homoeopathic principles to form Totality of symptoms
4. Choose the appropriate repertorial approach, Method and Technique to repertorize a case
5. Utilize Repertory as a tool to find out simillimum in all types of cases and in the study of Materia Medica
6. Integrate other subjects in understanding the construction and utility of repertories
7. Utilize different software for Repertorization, patient data management and record keeping.
8. Demonstrate aptitude to utilize repertory for research in Homoeopathy and lifelong learning

COURSE OUTCOMES OF REPERTORY FOR I BHMS

At the end of IBHMS, the student should be able to,

1. Define Repertory.
2. Explain the need and utility of repertory to find simillimum and in the study of Materia Medica
3. Define various terminologies used in repertory and explain their utility
4. Locate different rubrics related to anatomy, physiology and psychology in Kent's Repertory
5. Illustrate the construction of Kent's Repertory as per the Hahnemannian Anatomical schema

4.TEACHING HOURS

Total Number of Teaching Hours: 21			
Course Name	**Lectures**	**Non-Lectures**	**Total**
Homoeopathic Repertory and Case Taking (HomUG-R-I)	21	-	21

5. COURSE CONTENT(HomUG-R-I)

S. No	List of Topics	Lecture Hours
1	**Introduction to Repertory, Definition and Meaning of Repertory** ❖ General Introduction to Repertory ❖ Origin of Repertory ❖ Need of Repertory ❖ Definition of Repertory ❖ Meaning of REPERTORIUM	3
2	**Need and uses of repertory and repertorization** ❖ Uses and Scopes of Repertory ❖ Limitations of Repertory ❖ Definition of Repertorization ❖ Introduction to Methods and Techniques of Repertorization	3
3	**Terminologies relevant to Repertory** ❖ Repertory ❖ Rubric ❖ Gradation ❖ Cross Reference ❖ Synonym ❖ Repertorization ❖ Totality of Symptoms ❖ Repertorial Totality ❖ Potential Differential Field ❖ Conceptual Image	3

	❖ Case taking ❖ Analysis of a case ❖ Evaluation of a Case ❖ Longitudinal case Study ❖ Cross Section Study of a case ❖ General Repertory ❖ Regional Repertory ❖ Logico-Utilitarian Repertory ❖ Puritan Repertory	
4	**Schematic representation of chapters in Kent's repertory** ❖ Introduction to Kent's Repertory ❖ Listing of Chapters in Kent's Repertory ❖ Correlation of Chapters in Kent's Repertory to Hahnemannian Anatomical Schema ❖ Chapters and Rubrics related to anatomical structures, physiological processes and psychology in Kent's Repertory	**6**
5	**Correlation of Anatomy, Physiology and Psychology with Repertory** ❖ Introduction to correlation with Anatomy, Physiology and Psychology with Repertory ❖ Chapters and Rubrics related to Anatomical parts in Dr. Kent's Repertory ❖ Chapters and Rubrics related to Physiology in Dr. Kent's Repertory ❖ Rubrics related to emotions, intellect and memory in Mind chapter of Dr. Kent's Repertory	**6**

6.Teaching Learning Methods

Theory	**Practicals/ Clinics**
Lectures	Clinical Bedside Teaching
Small Group Discussion	Integrated Clinics
Integrated Lectures	Case Study
Integrated Seminars	Rubric Banks
Assignments	
Rubric Banks	
Library Reference	

7.Content Mapping (Theory) of Course HomUG-R-I

neric mpeten	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assemen
pic 1- Introduction to Repertory, Definition and Meaning of Repertory										
hering egratio of ormati	Introduction to Repertory	Knows	Get acquainted with tools required to search for remedy.	*Define* the term Repertory	Cognitive	Level I (Remember / recall)	Must Know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*Explain* the meaning of Repertory	Cognitive	Level I (Remember / recall)	Desirable to know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*Discuss* the origin of the word Repertory	Cognitive	Level II (Understand)	Nice to know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*List* three uses and three limitations of Repertory	Cognitive	Level I (Remember / recall)	Must Know	Lecture, Integrated teaching (with Materia Medica) Small Group discussion	MCQ, SAQ, Viva Voce	------

neric mpeten	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assemen
PIC 2: Need and uses of repertory and repertorisation										
hering egratio of ormati	Need and uses of repertory and repertorisation	Knows	Get acquainted with tools required to search for remedy.	*Explain* the need of repertory	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*Explain* the need of Repertorization to find a simillimum	Cognitive	Level II (Understand)	Desirable to know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*Describe* the uses of Repertory	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*Describe* the limitations of Repertory	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion	MCQ, SAQ, Viva Voce	------
		Knows		*Discuss* the use of Repertory as a tool to	Cognitive	Level II (Understand)	Desirable to know	Lecture, Small Group discussio	MCQ, SAQ, Viva Voce	------

neric mpeten	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessmen
				select the remedy for a given case				n, Clinical Teaching		
PIC 3: Terminologies relevant to Repertory										
hering egratio of ormati	Terminologies used in repertory	Knows	To understand the definition of various terminologies used in repertory in order to apply them for Repertorization	*Define* different terminology associated with repertory	Cognitive	Level I (Remember / recall)	Must know	Lecture, Small Group discussion,	MCQ, SAQ, Viva Voce	------
		Knows		*Explain* the meaning and use of each terminology	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce	------
		Knows		*Apply* the terminology in the process of Repertorization	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce	------
PIC 4: Schematic representation of chapters in Kent's repertory										

neric mpeten	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessmen
hering egratio of ormati blem ving	Schematic representation of chapters in Kent's repertory	Knows	To understand the arrangement of Chapters in Dr. Kent's Repertory	*List* the 37 chapters of Kent's Repertory in the proper order	Cognitive	Level I (Remember / recall)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------
		Shows how		*Demonstrate* the relation of chapters in Kent's Repertory to Anatomy and Physiology and mental rubrics to Psychology	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------
		Knows		*Discuss the correlation of chapters* in Kent's Repertory to the schematic representation of remedies in	Cognitive	Level II (Understand)	Desirable to know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------

neric mpeten	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessmen
				Materia Medica						
tion of Anatomy, Physiology and Psychology with Repertory										
hering egratio of ormati blem ving	Correlation of Anatomy, Physiology and Psychology with Repertory	Knows	To correlate the knowledge of Anatomy, physiology And Psychology in construction of Repertory and Rubrics	Apply the correlation of Anatomical Structures to Chapters and Rubrics in Kent's Repertory	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------
		Knows		Relate physiological Processes to the Chapters and Rubrics in Kent's Repertory	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------
		Knows		Apply the correlation of psychology in Mind Chapter and Rubrics in	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------

neric mpeten	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assemen
				Kent's Repertory						
		Shows how		Locate rubrics related to Anatomy, Physiology and Psychology in Kent's repertory	Psychomotor	Level II (Control)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------
		Knows		*Apply* rubrics related to Anatomy, Physiology and Psychology in understanding remedies in Materia Medica and Repertory	Cognitive	Level II (Understand)	Must know	Lecture, Small Group discussion, Clinical teaching	MCQ, SAQ, Viva Voce, OSPE	------

8.List of Practical Topics

S. No	Name of Topic	Activity/ Practical	TL Method
1	Basic Structure of Repertory showing arrangement of rubric of anatomy, physiology and psychology	Arrangement of Chapters and rubrics related to anatomical structures, physiology and psychology (Emotions, intellect and behaviour) in Kent's Repertory	Integrated BHMS

9. **List of Recommended Books**

- Dhawale ML (2000) - Principles and Practice of Homoeopathy
- Hahnemann S (2017). Organon of Medicine 6th Edition
- Kent, JT- Repertory of the Homoeopathic Materia Medica (Sixth American Edition)
- Kishore, Jugal (2004) -Evolution of Homoeopathic Repertories and Repertorization
- Munir Ahmed R (2016). Fundamentals of Repertories: Alchemy of homeopathic methodology
- Patel, R.P (1998): The Art of Case Taking and Practical Repertorization
- Tiwari, Shashikant (2005) - Essentials of Repertorisation

List of contributors:

1. **Dr. Manish Arya**
   Professor and HOD, Department of Repertory, Dr. D.Y. Patil Homoeopathic Medical College and Research Centre, Pune
2. **Dr. Lokanath Behera**
   Associate Professor& Head of the Department (Repertory)
   National Institute of Homoeopathy
3. **Dr. Kamlesh Mehta**
   Former HOD, CMP College, Mumbai
4. **Dr. Hema Parikh**
   Prof, MKSH, Karjan
5. **Dr. Manisha Patel**
   HOD, Dr. R A Patel HMC, Mehsana
6. **Dr. Uttara Agale**
   Reader, YMT, Kharghar

COMPETENCY BASED DYNAMIC CURRICULUM FOR

FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(Human physiology & Biochemistry)

HOMOEOPATHY EDUCATION BOARD

NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058

Course- Human physiology & Biochemistry

Course code: Hom UG - PB

INDEX

S.No	Description	Page No
1	Preamble	02
2	Program Outcomes (PO)	03
3	Course Outcome (CO)	04
4	Teaching Hours	05
5	Course Content	09
6	Teaching Learning Methods	15
7	Content Mapping (Competencies Table)	16
8	Practical Topics	69
9	Assessment	71
10	List of Recommended Books	75
11	List of Contributors	76

1. PREAMBLE

Physiology studies the functional organization of man at several levels like atom, chemical, cells, tissues, organ systems and the whole body to understand fundamental mechanisms that operate in a living organism. The underlying goal is to explain the operations in a living organism.

Besides satisfying a natural curiosity about how humans function, the study of physiology is of central importance in medicine and related health sciences, as it underpins advances in our understanding of disease and our ability to treat it more effectively. It is also important from psychological and philosophical viewpoints, helping us to understand the different systems. Homoeopathic Philosophy postulates the force animating every cell as the Vital Force which helps in homoeostasis. When it is deranged due to web of causes, disease develops.

Homoeopath must understand Man in a holistic way which would help him to deliver the therapeutic action for the purpose of bringing about a cure. Understanding the structural organisation i.e., Anatomy along with psychological organisation go hand in hand. Their interplay maintains health and delivers optimum function for healthy living and progressing towards higher purpose as per Hahnemannian guidelines. Hence physiology needs to be integrated horizontally with Anatomy, Materia Medica, Organon of Medicine, Psychology & Pharmacy as well as vertically with Pathology, Surgery, Obstetrics &Gynaecology, Community Medicine, Practice of Medicine & Repertory for better grasp of health, disease and process of cure.

Advances in biochemical processes have been occurring at an astonishing pace. The action of homoeopathic medicines does occur at sub-cellular levels. Hence an in-depth understanding and correlation of the processes in health and disease can open up a whole new way of understanding Homoeopathic drugs and their far-reaching effects.

2.PROGRAMME OUTCOMES:

At the end of the course of the undergraduate studies, the homoeopathic physician must

1) Develop the knowledge, skills, abilities and confidence as a primary care homoeopathic practitioner to attend to the health needs of the community in a holistic manner
2) Correctly assess and clinically diagnose common clinical conditions prevalent in the community from time to time
3) Identify and incorporate the socio-demographic, psychological, cultural, environmental & economic factors affecting health and disease in clinical work
4) Recognize the scope and limitation of homoeopathy in order to apply Homoeopathic principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community
5) Be willing and able to practice homoeopathy as per medical ethics and professionalism.
6) Discern the scope and relevance of other systems of medical practice for rational use of cross referrals and role of life saving measures to address clinical emergencies
7) Develop the capacity for critical thinking, self reflection and a research orientation as required for developing evidence based homoeopathic practice.
8) Develop an aptitude for lifelong learning to be able to meet the changing demands of clinical practice
9) Develop the necessary communication skills and enabling attitudes to work as a responsible team member in various healthcare settings and contribute towards the larger goals of national health policies such as school health, community health and environmental conservation.

3. Course Outcomes (COs):

At the end of the course the student will be able to:

1. Discuss the Homoeopathic concept of health in relation to integrated body structure and functions.
2. Explain the normal functioning of the human body at all levels of organization.
3. Relate the concept of homoeostasis with relevant ideas in Anatomy, Materia medica and Organon of Medicine at BHMS I level .
4. Elucidate the physiological aspects of normal growth and development with focus on evolution.
5. Correlate micro functions at cellular level with macro functions at organ-system level.
6. Use necessary communication skills required for history-taking of the patient & relating various clinical findings in the patient.
7. Perform experiments in haematology, clinical physiology & biochemistry as required for the study of physiological phenomena and for assessment of normal function.
8. Identify the normal values of haematology, clinical physiology & biochemistry.
9. Perform clinical – physiological examination under supervision.
10. Correlate knowledge of Organon & Materia Medica with Physiology.
11. Explain the integrated responses of the organ systems of the body to physiological and pathological stresses.

4. TEACHING HOURS

Sr No.	Subject	Theoretical Lecture	Practical / Tutorial / Seminar / Clinical Posting
01	PHYSIOLOGY & BIOCHEMISTRY	325 hrs.	330 hrs.

Theory Wise Teaching Hours Distribution – 325 Hours

Sr. No	**Paper-I**	
	List of System	**Teaching Hours**
1	General Physiology	20
2	Bio Physics Science	15
3	Skin & The Integumentary System	15
4	Body fluids & Immune mechanism	35
5	Nerve Muscle physiology	15
6	Cardiovascular system	20
7	Respiratory and Environmental Physiology	25
8	Renal Physiology	20
	Total	**165**
Sr. No	**Paper-II**	
	List of System	**Teaching Hours**
1	Central Nervous System	35
2	Endocrinology	30
3	Reproduction	15
4	Special Senses	20
5	Digestion and Nutrition	35
6	Biochemistry	25
	Total	**160**

Practical / Clinical Physiology / OPD Wise Teaching Hours Distribution – 330 Hours

Physiology – Practical – lab work			
No	**Practical**	**Demonstration / Performance**	**Number of Teaching Hours**
HAEMATOLOGY			
1	Study of the Compound Microscope	Performance	05
2.	Collection of Blood Samples	Performance	05
3	Estimation of Haemoglobin Concentration	Performance	05
4	Determination of Haematocrit	Demonstration	05
5	Hemocytometry	Performance	05
6	Total RBC Count	Performance	10
7	Determination of RBC Indices	Demonstration	05
8	Total Leucocytes Count (TLC)	Performance	10
9	Preparation And Examination Of Blood Smear	Performance	10
10	Differential Leucocyte Count (DLC)	Performance	10
11	Absolute Eosinophil Count	Demonstration	05
12	Determination of Erythrocyte Sedimentation Rate	Demonstration	05
13	Determination of Blood Groups	Performance	05
14	Determination of Bleeding Time and Coagulation Time	Performance	05
BIOCHEMISTRY			
1	Demonstration of Uses Of Instruments Or Equipment	Demonstration	05
2	Qualitative Analysis of Carbohydrates, Proteins And Lipids	Performance	10
3	Normal Characteristics of Urine	Performance	04
4	Abnormal Constituents of Urine	Performance	10
5	Quantitative Estimation of Glucose, Total Proteins, Uric Acid in Blood	Performance	05
6	Liver Function Tests	Demonstration	04
7	Kidney Function Tests	Demonstration	04
8	Lipid Profile	Demonstration	04
9	Interpretation and Discussion of Results of Biochemical Tests	Demonstration	04
	Total		**140**

CLINICAL PHYSIOLOGY			
1	Case Taking & Approach to pt	Performance	05
2	General Concept Of Examination	Performance	10
3	Examination of muscles, joints,	Performance	10
4	Cardio-Vascular System – Blood Pressure Recording, Radial Pulse, ECG, Clinical Examination	Performance	15
5	Nervous System- Clinical Examination	Performance	15
6	Respiratory System- Clinical Examination, Spirometry, Stethography	Performance	15
7	Special Senses- Clinical Examination	Performance	15
8	Reproductive System- Diagnosis of Pregnancy	Performance	05
9	Gastrointestinal System- Clinical Examination	Performance	10
	Total		**100**
OPD – APPLIED PHYSIOLOGY			
1	OPD (Applied Physiology)	Demonstration & Performance	90
	TOTAL		**90**

Semester Wise Distribution of Theory, Practical, Clinical Physiology & OPDs

Sr. No	Theory, Practical, Clinical Physiology & OPDs
SEMESTER - 1	
Module 1. Organization of the human body	**Theory :** • General physiology • Bio Physics Science • Skin & The integumentary System **Clinical Physiology :** • Case Taking & Approach to Patient • General concept of examination.
Module 2 Principals of Support System & Movements with transportation	**Theory :** • Body Fluid & Immune Mechanism • Nerve Muscles Physiology

	Practical : • Study of the Compound Microscope • Collection of Blood Samples • Estimation of Haemoglobin Concentration • Determination of Haematocrit • Haemocytometry • Total RBC Count • Determination of RBC Indices • Total Leucocytes Count (TLC) • Preparation And Examination Of Blood Smear • Differential Leucocyte Count (DLC) • Absolute Eosinophil Count • Determination of Erythrocyte Sedimentation Rate • Determination of Blood Groups • Determination of Bleeding Time and Coagulation Time **Clinical Physiology :** Examination of muscles, joints,
4th Month – 5 days PA 6th Month – 10 days TT – including Viva Voce	
SEMESTER – 2	
Module 3. Vital Maintenance of the human body	**Theory :** • Cardiovascular System • Respiratory & Environmental Physiology **Clinical Physiology :-** • Cardio-Vascular System – Blood Pressure Recording, Radial Pulse, ECG, Clinical Examination • Respiratory System- Clinical Examination, Spirometry, Stethography • OPD (Applied Physiology)

Module 4. Control system of the human body with continuity	**Theory :** • Central Nervous System • Endocrinology **Clinical Physiology :** • Nervous System- Clinical Examination • Special Senses- Clinical Examination • Reproductive System – Diagnosis of pregnancy • OPD
9th Month – 5 days PA 12th Month – 10 days TT – including Viva Voce	
SEMESTER - 3	
Module 5. **Energy maintenance of human body**	**Theory :** • Reproductive System • Special Senses • Digestion System & Nutrition • Renal Physiology • Bio-Chemistry **Practical : -** • Demonstration of Uses Of Instruments Or Equipment • Qualitative Analysis of Carbohydrates, Proteins And Lipids • Normal Characteristics of Urine • Abnormal Constituents of Urine • Quantitative Estimation of Glucose, Total Proteins, Uric Acid in Blood • Liver Function Tests • Kidney Function Tests • Lipid Profile • Interpretation and Discussion of Results of Biochemical Tests **Clinical Physiology :-**

	• Gastrointestinal System- Clinical Examination • OPD
14th Month – 5 days PA 18th Month – 12 days TT – including Viva Voce – University exam	

5.COURSE CONTENT

1. The purpose of a course in physiology is to enable the students to learn the functions, processes and inter-relationship of the different organs and systems of the normal disturbance in disease so that the student is familiar with normal standards of reference while diagnosing deviations from the normal, and while treating the patients.
2. There can be no symptoms of disease without vital force animating the human organism and it is primarily the vital force which is maintaining state of health
3. Physiology shall be taught from the stand point of describing physical processes underlying them in health;
4. Applied aspect of every system including the organs is to be stressed upon while teaching the subject.
5. Correlation with Organon and philosophy especially the concept of health and its derangement the interplay of different cell, tissue organ and system, their representation in repertory and integration in HMM
6. There should be close co-operation between the various departments while teaching the different systems;

7. There should be joint courses between the two departments of anatomy and physiology so that there is maximum co-ordination in the teaching of these subjects;
8. Seminars should be arranged periodically and lecturers of anatomy, physiology and bio-chemistry should bring home the point to the students that the integrated approach is more meaningful.

THEORY:-

1. **GENERAL PHYSIOLOGY:**
    - Introduction to cellular physiology
    - Cell Junctions
    - Transport through cell membrane and resting membrane potential Body fluids compartments
    - Homeostasis
2. **BIO-PHYSICAL SCIENCES**
    - Filtration Ultra-filtration Osmosis
    - Diffusion Adsorption Hydrotropy, Colloid
    - Donnan Equilibrium Tracer elements Dialysis
    - Absorption Assimilation Surface tension
3. **SKIN &THE INTEGUMENTARY SYSTEM**
    - Skin & Integumentary System
    - Layers of Skin
    - Function of Skin
    - Sweat
    - Body temperature and its regulation
4. **BODY FLUID & IMMUNE MECHANISM**
    - Blood
    - Plasma Proteins
    - Red Blood Cells
    - Erythropoiesis
    - Haemoglobin and Iron Metabolism

- Erythrocyte Sedimentation Rate
- Packed Cell Volume and Blood Indices
- Haemolysis and Fragility of Red Blood Cells
- White Blood Cell
- Immunity
- Platelets
- Haemostasis
- Coagulation of Blood
- Blood groups
- Blood Transfusion
- Blood volume
- Reticulo-endothelial System and Tissue Macrophage Lymphatic System and Lymph
- Tissue Fluid and Oedema

5. NERVE MUSCLE PHYSIOLOGY

- Physiological properties of nerve fibres
- Nerve fibre- types, classification, function, Degeneration and regeneration of peripheral nerves
- Neuro-Muscular junction
- Physiology of Skeletal muscle
- Physiology of Cardiac muscle
- Physiology of Smooth muscle
- EMG

6. **CARDIO-VASCULAR SYSTEM**

- Introduction to cardiovascular system Properties of cardiac muscle
- Cardiac cycle
- General principles of circulation Heart sounds
- Regulation of cardiovascular system
- Normal and abnormal Electrocardiogram (ECG)
- Cardiac output

- Heart rate
- Arterial blood pressure
- Radial Pulse
- Regional circulation- Cerebral, Splanchnic, Capillary, Cutaneous & skeletal muscle circulation.
- Cardiovascular adjustments during exercise

7. RESPIRATORY SYSTEM AND ENVIRONMENTAL PHYSIOLOGY

- Physiological anatomy of respiratory tract
- Mechanism of respiration: Ventilation, diffusion of gases
- Transport of respiratory gases Regulation of respiration Pulmonary Function Test
- High altitude and space physiology Deep sea physiology
- Artificial respiration
- Effects of exercise on respiration

8. CENTRAL NERVOUS SYSTEM

- Introduction to nervous system Neuron
- Neuroglia
- Receptors
- Synapse
- Neurotransmitters
- Reflex
- Spinal cord
- Somato-sensory system and somato-motor system Physiology of pain
- Brain stem, Vestibular apparatus
- Cerebral cortex
- Thalamus
- Hypothalamus
- Internal capsule
- Basal ganglia
- Limbic system

- Cerebellum – Posture and equilibrium
- Reticular formation
- Proprioceptors
- Higher intellectual function Electroencephalogram (EEG)
- Physiology of sleep
- Cerebro-spinal fluid (CSF) Autonomic Nervous System (ANS)

9. ENDOCRINOLOGY

- Introduction of endocrinology and importance of PNEI axis Hormones and hypothalamo- hypophyseal axis
- Pituitary gland
- Thyroid gland
- Parathyroid
- Endocrine functions of pancreas Adrenal cortex
- Adrenal medulla
- Endocrine functions of other organs

10. REPRODUCTIVE SYSTEM

- Male reproductive system-testis and its hormones; seminal vesicles, prostate gland, semen.
- Introduction to female reproductive system
- Menstrual cycle
- Ovulation
- Menopause
- Infertility
- Pregnancy and parturition Placenta
- Pregnancy tests
- Mammary glands and lactation Fertility
- Foetal circulation

11. SPECIAL SENSES

- Eye: Photochemistry of vision, Visual pathway, Pupillary reflexes, Colour vision, Errors of refraction
- Ear: Auditory pathway, Mechanism of hearing, Auditory defects

- Sensation of taste: Taste receptors, Taste pathways
- Sensation of smell: Olfactory receptors, olfactory, pathways Sensation of touch

12. DIGESTIVE SYSTEM & NUTRITION

- Introduction to digestive system
- Composition and functions of digestive juices
- Physiological anatomy of Stomach, Pancreas, Liver and Gall bladder, Small intestine, Large intestine
- Movements of gastrointestinal tract
- Gastrointestinal hormones
- Digestion and absorption of carbohydrates, proteins and lipids

13. RENAL PHYSIOLOGY

- Physiological anatomy of kidneys and urinary tract
- Fluid & electrolyte with acid base balance need to be include
- Renal circulation
- Urine formation: Renal clearance, glomerular filtration, tubular reabsorption, selective secretion, concentration of urine, acidification of urine
- Renal functions tests
- Micturition

14. BIO-CHEMISTRY THEORY

- Carbohydrates: (Chemistry, Metabolism, Glycolysis, TCA, HMP, Glycogen synthesis and degradation, Blood glucose regulation)
- Lipids: (Chemistry, Metabolism, Intestinal uptake, Fat transport, Utilization of stored fat,Activation of fatty acids, Beta oxidation and synthesis of fatty acids)
- Proteins: (Chemistry, Metabolism, Digestion of protein, Transamination, Deamination Fate of Ammonia, Urea cycle, End products of each amino acid and their entry into TCA cycle
- Enzymes: (Definition, Classification, Biological Importance, Diagnostic use, Inhibition)
- Vitamins: (Daily requirements, Dietary source, Disorders and physiological role)
- Minerals (Daily requirement, Dietary Sources, Disorders and physiological role) mineral metabolism
- Organ function tests

PRACTICAL & CLINICAL PHYSIOLOGY:-

No	Practical	Demonstration / Performance
	Haematology	
1	Study of the Compound Microscope	Performance
2.	Collection of Blood Samples	Performance
3	Estimation of Haemoglobin Concentration	Performance
4	Determination of Haematocrit	Demonstration
5	Hemocytometry	Performance
6	Total RBC Count	Performance
7	Determination of RBC Indices	Demonstration
8	Total Leucocytes Count (TLC)	Performance
9	Preparation And Examination Of Blood Smear	Performance
10	Differential Leucocyte Count (DLC)	Performance
11	Absolute Eosinophil Count	Demonstration
12	Determination of Erythrocyte Sedimentation Rate	Demonstration
13	Determination of Blood Groups	Performance
14	Determination of Bleeding Time and Coagulation Time	Performance
	Biochemistry	
1	Demonstration of Uses Of Instruments Or Equipment	Demonstration
2	Qualitative Analysis of Carbohydrates, Proteins And Lipids	Performance
3	Normal Characteristics of Urine	Performance
4	Abnormal Constituents of Urine	Performance
5	Quantitative Estimation of Glucose, Total Proteins, Uric Acid in Blood	Performance
6	Liver Function Tests	Demonstration
7	Kidney Function Tests	Demonstration
8	Lipid Profile	Demonstration
9	Interpretation and Discussion of Results of Biochemical Tests	Demonstration
	Clinical Physiology & OPD	
1	Case Taking & Approach to pt	Performance
2	General Concept Of Examination	Performance

3	Examination of muscles, joints,	Performance
4	Cardio-Vascular System – Blood Pressure Recording, Radial Pulse, ECG, Clinical Examination	Performance
5	Respiratory System- Clinical Examination, Spirometry, Stethography	Performance
6	Nervous System- Clinical Examination	Performance
7	Special Senses- Clinical Examination	Performance
8	Reproductive System- Diagnosis of Pregnancy	Performance
9	Gastrointestinal System- Clinical Examination	Performance
10	OPD	Demonstration & Performance

6. TEACHING LEARNING METHODS

Different teaching-learning methods must be apply for understanding holistic and integrated way of physiology. There has to be classroom lectures, small group discussions, case discussion where case based learning (CBL) and problem based learning (PBL). In the applied physiology, Case discussion (CBL-PBL) methods are helpful for students. AV – Methods for demonstration of physiological processes will be very helpful. In process of Clinical Physiology – DOAP (Demonstration – Observation – Assistance – Performance) is very well applicable.

Practical & Clinics are the best medium to demonstrate all physiological processes in objective ways. They help us to understand and explain the physiological signs. Haematological & Biochemistry practical are done in laboratory, where one can apply the DOAP (Demonstration – Observation – Assistance – Performance) & OSPE (Objective Structured Practical Examination) methods. All this should be recorded in the journal.

In the clinics / OPD / IPD / Bed side there shall be exposure of Clinical & Applied Physiology. These can be demonstrated by DOAP (Demonstration – Observation – Assistance – Performance) & OSCE (Objective Structured Clinical Examination) methods. These methods are more objective, and t will help students to develop the attitude as clinicians. In these type of exposure students has to observe the teachers or consultants and able to corelate what they have learned in clinical physiology classes. They do not have to examine the patient by themselves but only observe the teachers. They can keep the record of all physiological function which are disturbed.

Other Innovative methods include preparation of charts and models.

7.CONTENT MAPPING (COMPETENCY TABLE)

SEMESTER – 1

Topic No	**1**
Theory	**General Physiology**
Practical	**-**
Clinical Physiology	**Case Taking & Approach to Patient**

Learning Outcome: -

At the end of the chapter General Physiology, the student must be able to –

- Discuss the principles of cellular physiology.
- Classify cell junctions.
- Explain the process of transport through cell membrane
- Describe the resting membrane potential.
- Categorise body fluids compartments.
- Explain the concept of homeostasis

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know/ desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 1.1	Integration Of Information (K-1)	Introduction & Cell	Knows	Definition & general introduction	Define Physiology.	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	MCQs	_	
Hom UG-PB 1.2			Knows How		Discuss the importance of learning physiology in a homoeopathic course	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	Viva Voce	Organon
Hom UG-PB 1.3			Knows How		Discuss the Internal & external	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	

					environment of Body							
Hom UG-PB 1.4	Integration Of Information (K-1)	Homeostasis	Knows How W	Describe and discuss the principles of homeostasis	Explain the regulation of internal environment	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology Organon
Hom UG-PB 1.5			Knows How		Explain homoeostasis & it's control	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	
Hom UG-PB 1.6	Integration Of Information (K-1)	The Cellular Level Organisation	Knows How	Describe the structure and functions of a mammalian cell	Describe the structure of cell	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Pathology
Hom UG-PB 1.7			Knows How		Describe the functions of cell	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Organon
Hom UG-PB 1.8			Knows		List the organelles present in cell	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	
Hom UG-PB 1.9			Knows		Enumerate the functions of organelles	Cognitive	Level 1 (Remember / recall)	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology
Hom UG-PB 1.10			Knows		List the name of intracellular junction	Cognitive	Level 1 (Remember / recall)	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 1.11			Knows How		Discuss the importance of intracellular Junction	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	Viva Voce	Anatomy

Hom UG-PB 1.12	Integration Of Information (K-1)		Knows How	To understand transport mechanisms across cell membranes	Explain Passive transportation	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 1.13			Knows How		Explain Active Transportation	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 1.14			Knows How		Explain Vesicular Transportation	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 1.15	Information Gathering , Integration Of information, Problem Integration (K-2)	Clinical & Applied Physiology	Shows How	To conduct History taking	Demonstrate history taking process	Affective	Level 1 Receiving	Must know	Demonstration, Role Play	Observation	DOPS	

Topic No	**2**
Theory	**Bio Physics Science**
Practical	**-**
Clinical Physiology	**-**

Learning Outcomes: -

At the end of the chapter Bio Physics Science, the student must be able to –

- Define biophysics.
- Illustrate the biophysical activity across the cell membrane.
- Explain membrane potential.
- Describe the chemical bond & solution.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 2.1	Integration Of Information (K-1)	Bio Physics Science	Knows	To understand the bio-Physical science of cell membrane	Define the terms Filtration& Ultrafiltration	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.2			Knows		Define intra cellular communication	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.3			Knows		Define the terms adsorption & Absorption	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.4			Knows		Define the terms Hydro trophy, Dialysis & Assimilation	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry Medicine
Hom UG-PB 2.5			Knows		Define Surface Tension	Cognitive	Level 1 (Remember / recall)	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry Medicine
Hom UG-PB 2.6	Integration Of Information (K-1)		Knows How	Discuss the Membrane Physiology &Membrane Potential	Explain Action Potential	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.7			Knows		Define Donnan Equilibrium	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.8			Knows		Define Transmembrane Potential	Cognitive	Level 1 (Remember / recall)	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry

Hom UG-PB 2.9			Knows How		Explain nerve action potential	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 2.10			Knows		Define Tracer Elements	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 2.11			Knows		Define Rhythmicity of some excitable tissues	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 2.12	Integration Of Information (K-1)	The Chemical Level Organisation	Knows How	Understand the chemical bonds	Describe the Ionic Bond	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.13			Knows How		Describe the covalent bond	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.14			Knows How		Describe the Hydrogen Bond	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Biochemistry
Hom UG-PB 2.15	Integration Of Information (K-1)		Knows	Understand the inorganic Compound & Solution	Define the terms Colloid, Solution & Suspension	Cognitive	Level 1 (Remember / recall)	Desirable to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.16			Knows How		Discuss the characteristics of acids, Base & Salts	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.17			Knows How		Discuss acid - base balance & its application to the concept of pH	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 2.18			Knows How		Describe the maintaining of pH: Buffer System	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Biochemistry

Topic No	**3**
Theory	**Skin & The Integumentary System**
Practical	**-**
Clinical Physiology	**Demonstration of General Examination**

Learning Outcomes: -

At the end of the chapter Skin & the Integumentary System, the student must be able to –

- Discuss the functions of skin, nail, and hair.
- Conduct examination of the Integumentary System under supervision.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know/ desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 3.1	Integration Of Information (K-1)	Skin & The Integum	Knows How	Understand the Structure & function of Skin	Discuss layers of skin with their functions	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Medicine Organon

		entary System										Materia Medica Pharmacy
Hom UG-PB 3.2			Knows How		Relate the structure of hair with its function	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 3.3			Knows How		Relate the structure of nail with its function	Cognitive	Level 2 Understand / interpret	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 3.4			Knows How		Relate the structure of different glands of skin with their functions	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 3.5			Knows How		Describe the glands of skin	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	
Hom UG-PB 3.6			Knows How		Explain the regulation of body temperature through skin	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 3.7	Information Gathering , Integration Of information, Problem Integration (K-2)	Clinical & Applied Physiology	Shows How	To demonstrate General examination	Demonstrate the examination of Skin & Mucus Membrane	Psycho Motor	Level 1 Observe / Imitate	Must know	DOAP	Observation	OSCE	Medicine
Hom UG-PB 3.8			Shows How		Demonstrate the examination of Conjunctive, Nail & Glands	Psycho Motor	Level 1 Observe / Imitate	Must know	DOAP	Observation	OSCE	Medicine

Topic No	**4**
Theory	**Nerve Muscle Physiology**
Practical	**-**
Clinical Physiology	**Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters Perform Ergography, Examination of muscles, joints,**

Learning Outcomes: -

At the end of the chapter Nerve Muscle Physiology, the student must be able to –

- Discuss the properties and functions of neurons.
- Illustrate a neuromuscular junction.
- Classify muscle fibres.
- Describe the properties of skeletal, cardiac, and smooth muscle fibres.
- Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters.
- Perform Ergography under supervision.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 4.1	Integration Of Information (K-1)	Nerve Muscle Physiology	Knows	To understand the functional anatomy of Nerve fibers	Define Neuron Classify neurons	Cognitive	Level 1 (Remember/ recall)	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 4.2			Knows How		Explain structure and	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy

					function of neuroglia							
Hom UG-PB 4.3	Integration Of Information (K-1)		Knows	To understand the physiological properties of nerve fibers	Define the terms Excitability & Conductivity	Cognitive	Level 1 (Remember/ recall)	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs Viva Voce	
Hom UG-PB 4.4			Knows How		Discuss graded & action potential	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	
Hom UG-PB 4.5	Integration Of Information (K-1)		Knows How	To understand the degeneration & regeneration of neuron	Discuss the causes & grade of injury	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 4.6			Knows How		Identify the stages of degeneration	Cognitive	Level 2 Understand / interpret	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology
Hom UG-PB 4.7			Knows How		Discuss the stages of regeneration	Cognitive	Level 2 Understand / interpret	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 4.8	Integration Of Information (K-1)		Knows How	To describe Neuromuscular Junction	Illustrate the Structure of Neuro-Muscular Junction	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 4.9			Knows How		Discuss the Neuromuscular Transmission	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy
Hom UG-PB 4.10			Knows How		Discuss Disorders of neuromuscular Junction	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion, CBL, PBL	MCQs	SAQs, Viva Voce	Medicine

Hom UG-PB 4.11	Integration Of Information (K-1)		Knows How	To understand the physiological properties of Skeletal Muscle	Illustrate the mechanism of skeletal muscle contraction. Describe the general mechanism of muscle contraction.	Cognitive	Level 2 Understand / interpret	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 4.12			Knows How		Discuss Molecular mechanism	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 4.13			Knows How		Discuss Energetic of muscle contraction	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy
Hom UG-PB 4.14			Knows How		Discuss Excitation of skeletal muscle	Cognitive	Level 2 Understand / interpret	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 4.15	Integration Of Information (K-1)		Knows How	To understand the physiological properties of Smooth Muscle	Explain Contraction of smooth muscle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 4.16			Knows How		Explain Nervous & hormonal control of smooth muscle contraction	Cognitive	Level 2 Understand / interpret	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 4.17	Integration Of Information (K-1)		Knows How	To understand the physiological properties of Cardiac Muscle	Illustrate Functional Anatomy of cardiac Muscle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 4.18			Knows How		Explain process of excitability & contractility	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy

Hom UG-PB 4.19			Knows How		Explain properties of cardiac muscle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 4.20			Knows How		Discuss the disorders of Skeletal Muscles	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 4.21	Information Gathering , Integration Of information, Problem Integration (K-2)	Clinical & Applied Physiology Of Muscle	Shows How	Demonstrate effect of mild, moderate and severe exercise and record changes in cardio - respiratory parameters	Measure the parameters of cardio-pulmonary changes during exercise	Psycho Motor	Level 2 Control	Must Know	Demonstration	Observation	OSCE	Medicine
Hom UG-PB 4.22			Shows How	Perform Ergography	Demonstrate the sequence of performing ergography.	Psycho Motor	Level 1 Observe / Imitate	Nice to know	Demonstration	Observation	OSCE	Medicine

Topic No	**5**
Theory	**Body Fluid& Immune Mechanism**
Practical	**Hematology**
Clinical Physiology	

Learning Outcomes: -

At the end of the chapter on Body Fluid & Immune System & Hematology, the student must be able to –

- Describe the composition and functions of blood components
- Describe the origin, Forms, Variations and functions of plasma Protein
- Illustrate the synthesis of Haemoglobin
- Describe RBC formation (erythropoiesis) and its regulation
- Describe WBC formation (granulopoiesis) and its regulation
- Classify Anaemias & Jaundice
- Explain the role of lymphoid tissues in immune responses
- Classify different types of immunity
- Describe the development and regulation of immunity.
- Explain the formation and functions of platelets.
- Illustrate the physiological basis of haemostasis
- Describe different blood groups
- Discuss the clinical importance of blood grouping
- Describe blood transfusion
- Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 5.1	Integration Of Information (K-1)	Blood Fluid and It's Constituents	Knows How	Describe the composition and functions of blood components	Discuss the composition of Blood	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 5.2			Knows How		Describe the function of blood	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Pathology Medicine
Hom UG-PB 5.3			Knows		Define serum	Cognitive	Level 1 recall	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.4			Knows How		Explain the difference between serum & Plasma	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 5.5	Integration Of Information (K-1)		Knows How	Describe the origin, Forms, Variations and functions of plasma Protein	Discuss the origin of plasma protein	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 5.6			Knows How		Explain the forms and functions of plasma proteins	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology
Hom UG-PB 5.7			Knows How		Identify the relation of diet to plasma protein	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 5.8	Integration Of Information (K-1)		Knows How	Describe and discuss the synthesis and	Illustrate the structure of Haemoglobin	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry

Hom UG-PB 5.9			Knows How	functions of Haemoglobin	Discuss the synthesis of Haemoglobin	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 5.10			Knows		Define Normal function of Haemoglobin	Cognitive	Level 1 recall	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Biochemistry Materia Medica
Hom UG-PB 5.11			Knows		State normal Value of different varieties of Haemoglobin	Cognitive	Level 1 recall	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 5.12			Knows How		Explain Iron metabolism	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 5.13	Integration Of Information (K-1)		Knows How	Describe RBC formation (erythropoiesis & its regulation) and its functions	Discuss the normal structure of RBC with its morphology	Cognitive	Level 2 Understand / interpret	Desire to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Pathology Medicine
Hom UG-PB 5.14			Knows How		discuss stages and regulation of erythropoiesis	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 5.15			Knows How		Discuss the fate of RBC	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 5.16			Knows How		Discuss the hemolysis	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion, CBL	SAQs	SAQs, Viva Voce	Medicine FMT
Hom UG-PB 5.17	Information Gathering ,Integration Of information		Knows How	Describe different types of anemia & Jaundice	Classify the anemia according to their morphology & etiology	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion, CBL, PBL	MCQs	LAQs, Viva Voce	Medicine, Pathology

Hom UG-PB 5.18	, Problem Integration (K-2)		Knows How		Discuss the different anemia	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion, CBL, PBL	MCQs	LAQs, Viva Voce	Medicine, Pathology Materia Medica Repertory
Hom UG-PB 5.19			Knows How		Enumerate the different abnormal functions in anaemia	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion, CBL, PBL	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 5.20			Knows How		Discuss the fate of bilirubin	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion, CBL	SAQs	SAQs, Viva Voce	Medicine, Pathology Materia Medica Repertory
Hom UG-PB 5.21			Knows How		Explain Physiological Jaundice	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion, CBL	SAQs	SAQs, Viva Voce	Materia Medica Repertory
Hom UG-PB 5.22			Knows How		Explain Jaundice in new-born	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion, CBL	SAQs	SAQs, Viva Voce	Medicine Materia Medica Repertory
Hom UG-PB 5.23	Integration Of Information (K-1)		Knows How	Describe WBC formation (granulopoiesis) and its regulation	Explain different condition of leucocyte count in our body	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine Pathology
Hom UG-PB 5.24			Knows How		Classify different type of WBCs	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology
Hom UG-PB 5.25			Knows How		Discuss the function of WBCs as per their classification	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.26			Knows How		Discuss the phagocytosis	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology

Hom UG-PB 5.27			Knows How		Discuss the stages of leucopoiesis with its regulation	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 5.28			Knows How		Discuss the conditions that cause abnormal value of leucocyte	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Surgery Pathology
Hom UG-PB 5.29	Integration Of Information (K-1)		Knows How	Describe the formation of platelets, functions and variations.	Discuss the structure & function of Platelets	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology
Hom UG-PB 5.30			Knows How		Describe the Thrombopoiesis	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 5.31			Knows How		Discuss its count & variation of platelets	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 5.32	Integration Of Information (K-1)		Knows How	Describe the physiological basis of haemostasis	Describe the process of coagulation	Cognitive	Level 2 (Understand / interpret)	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology Materia Medica
Hom UG-PB 5.33			Knows How		Discuss the mechanism of haemostasis	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 5.34			Knows How		Explain stages of clotting mechanism	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.35	Integration Of Information (K-1)		Knows How	Describe the clinical importance of blood coagulation	Discuss hemorrhagic disorder	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion, CBL	MCQs	SAQs, Viva Voce	Medicine

Hom UG-PB 5.36	Integration Of Information (K-1)		Knows	Describe different blood groups	Classify the ABO blood group system	Cognitive	Level 1 Recall	Must Know	Lecture, Small group discussion	SAQs	LAQs Viva Voce	Pathology
Hom UG-PB 5.37			Knows How		Discuss Landsteiner's Law	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.38	Integration Of Information (K-1)		Knows How	Discuss the clinical importance of blood grouping	Describe Rhesus Blood Group	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 5.39			Knows How		Discuss Rh Incompatibility	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine, Pathology Obstetrics & Gynaecology
Hom UG-PB 5.40	Integration Of Information (K-1)		Knows How	Describe blood transfusion	Discuss the importance of Blood transfusion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Surgery Medicine
Hom UG-PB 5.41			Knows		List causes for Blood transfusion reaction	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.42	Integration Of Information (K-1)	Immune Mechanism	Knows How	Explain the role of lymphoid tissues in immune responses	Discuss Tissue Macrophage system	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.43			Knows How		Describe the morphology and functions of Lymphocytes & Plasma cell	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology
Hom UG-PB 5.44			Knows How		Explain the functions of spleen	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine

Hom UG-PB 5.45			Knows How		Discuss the formation and functions of Lymph	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 5.46	Integration Of Information (K-1)		Knows	Define and classify different types of immunity.	Define Immunity	Cognitive	Level 1 (Remember/ recall)	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Pathology Medicine Organon
Hom UG-PB 5.47			Knows How		Explain different type of immunity	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.48	Integration Of Information (K-1)		Knows How	Describe the development of immunity and its regulation	Discuss development of immune response	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology
Hom UG-PB 5.49			Knows How		Discuss Auto - immunity & Hypersensitivity	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.50			Knows How		Discuss Immunodeficiency Diseases	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 5.51	Information Gathering ,Integration Of information , Problem Integration (K-2)	Hematology Practical	Shows How	Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT	Estimate Hb in the given sample	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology Medicine
Hom UG-PB 5.52			Knows How		Interpret results of Hb estimation	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology Medicine
Hom UG-PB 5.53			Shows How		Perform RBC Total Count Estimation	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.54			Knows How		Interpret the results of RBC Total Count Estimation	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.55			Shows How		Perform WBC Total Count Estimation	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology Medicine

Hom UG-PB 5.56			Knows How		Interpret the results of WBC Total Count Estimation	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology Medicine
Hom UG-PB 5.57			Shows How		Perform WBC DC estimation	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.58			Knows How		Interpret the results of WBC DC estimation	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.59			Shows How		Record RBC indices	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology Medicine
Hom UG-PB 5.60			Knows How		Evaluate RBC indices	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology Medicine
Hom UG-PB 5.61			Shows How		Perform Blood Group identification	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.62			Shows How		Perform BT / CT	Psycho Motor	Level 2 (Control)	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.63			Knows How		Interpret the results of BT / CT	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.64			Shows How		Record ESR	Psycho Motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Pathology
Hom UG-PB 5.65			Knows How		Interpret the results of ESR estimation	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology
Hom UG-PB 5.66	Information Gathering ,Integration Of information , Problem		Shows How	Describe steps for reticulocyte and platelet count	Record Reticulocyte count	Psycho Motor	Level 1 (Observe / Imitate)	Nice to know	Demonstration	Observation	Observation	Pathology
Hom UG-PB 5.67			Knows How		Interpret the results of	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology Medicine

	Integration (K-2)				Reticulocyte count							
Hom UG-PB 5.68			Shows How		Record Platelet Count	Psycho Motor	Level 1 (Observe / Imitate)	Nice to know	Demonstration	Observation	Observation	Pathology
Hom UG-PB 5.69			Knows How		Interpret the results of Platelet Count	Cognitive	Level 2 Understand / interpret	Must know	DOAP	Observation	Checklist	Pathology Medicine

SEMESTER – 2

Topic No	**6**
Theory	**Cardio Vascular System**
Practical	
Clinical Physiology	**Cardio-Vascular System – Blood Pressure Recording, Radial Pulse, ECG, Clinical Examination**

Learning Outcomes: -

At the end of chapter on Cardio Vascular System & its examination, the student must be able to –

- Describe the functional anatomy of the heart, with respect to its chambers, valves, input and output vessels, AV ring and electrical discontinuity, Conducting system, Coronary supply.
- Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions.
- Discuss the events occurring during the cardiac cycle
- Illustrate the haemo-dynamics of circulatory system
- Explain the regulation of cardiac output
- Describe the normal mode of conduction of the cardiac impulse
- Explain coronary, cerebral, capillary, pulmonary& splanchnic circulation
- List the major diseases of cardiovascular system,

- Record Pulse, blood pressure, and ECG
- Perform the clinical examination of cardiovascular system

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 6.1	Integration Of Information (K-1)	Cardio Vascular System	Knows How	Describe the functional anatomy of heart including chambers, Sounds	Describe the chambers of heart	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Human Anatomy
Hom UG-PB 6.2			Knows How		Discuss the valves & the walls of heart	Cognitive	Level 2Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Human Anatomy
Hom UG-PB 6.3	Integration Of Information (K-1)		Knows How	Describe Pacemaker tissue and conducting system.	Explain the pacemaker of heart.	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine – Cardiology
Hom UG-PB 6.4			Knows How		Describe the conducting system	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 6.5	Integration Of Information (K-1)		Knows How	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	Discuss the Morphological Properties of heart	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 6.6			Knows How		Discuss the electrical properties of heart	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 6.7			Knows How		Discuss the mechanical & metabolic Properties of heart	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy
Hom UG-PB 6.8	Integration Of		Knows	Discuss the events occurring	Define Cardiac cycle	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine

Hom UG-PB 6.9	Information (K-1)		Knows How	during the cardiac cycle	Discuss the events of cardiac cycle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 6.10			Knows How		Explain the pressure changes during cardiac cycle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 6.11			Knows How		Explain the ECG changes during each cardiac cycle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 6.12	Integration Of Information (K-1)		Knows	Discuss heart sounds	Define Heart Sound	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 6.13			Knows How		Explain different heart sounds with their measurement technique	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	
Hom UG-PB 6.14			Knows How		Discuss the clinical importance of Murmurs & Triple heart sound	Cognitive	Level 2 Understand / interpret	Must know	Lecture, PBL, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Surgery
Hom UG-PB 6.15	Integration Of Information (K-1)		Knows How	Describe the physiology of electrocardiogram (E.C.G),	Discuss normal ECG with it's waves and intervals	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 6.16			Knows How		Explain in electrocardiography with unipolar & bipolar recording.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 6.17	Information Gathering ,Integration Of		Knows How	Discuss arrhythmia, heart block and myocardial	Classify arrythmias	Cognitive	Level 2 Understand / interpret	Must know	Lecture, PBL, Small group discussion	SAQs	SAQs, Viva Voce	Medicine

Hom UG-PB 6.18	information Problem Integration (K-2)		Knows How	Infarction	Explain Different degree of heart block. Explain Myocardial Infarction	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, PBL , Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology Materia Medica Repertory
Hom UG-PB 6.19	Integration Of Information (K-1)		Knows	Describe haemo-dynamics of circulatory system	List the functions of circulation	Cognitive	Level 1 Recall	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 6.20			Knows		State the functions of heart	Cognitive	Level 1 Recall	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 6.21			Knows How		Discuss the pressure changes in vascular system	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	Viva Voce	
Hom UG-PB 6.22			Knows		Recall the structure of the blood vessels	Cognitive	Level 1Recall	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 6.23	Integration Of Information (K-1)		Knows How	Describe the factors affecting heart rate,	Identify the factors affecting heart rate and how it affects	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 6.24			Knows How		Discuss the mechanism of control of heart rate	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 6.25	Integration Of Information (K-1)		Knows	Describe the regulation of cardiac output	Define cardiac output	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs	LAQs Viva Voce	Materia Medica Repertory
Hom UG-PB 6.26			Knows How		Discuss the distribution of cardiac output	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine

Hom UG-PB 6.27			Knows How		Discuss the factors affecting cardiac output	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 6.28			Knows How		Discuss in detail the Control mechanism of cardiac output	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 6.29	Integration Of Information (K-1)		Knows How	Understand the blood pressure regulation	Discuss the importance of blood pressure	Cognitive	Level 2 Understand / interpret	Must know	Lecture, PBL, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 6.30			Knows		State the factors affecting arterial blood pressure	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 6.31			Knows How		Discuss the determinants of arterial blood pressure	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 6.32			Knows How		Describe regulation of arterial blood pressure	Cognitive	Level 2 Understand / interpret	Must know	PBL, Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 6.33	Integration Of Information (K-1)		Knows How	Describe coronary, cerebral, capillary, pulmonary & splenic circulation	Discuss the capillary circulation	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 6.34			Knows How		Discuss the Coronary circulation	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology
Hom UG-PB 6.35			Knows How		Discuss the Cerebral circulation	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology
Hom UG-PB 6.36			Knows How		Discuss the Splenic circulation	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Medicine

Hom UG-PB 6.37			Knows How		Discuss Pulmonary circulation	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 6.38	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the mechanism of shock, syncope & Hypertension	Explain mechanism responsible for shock & syncope	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology
Hom UG-PB 6.39			Knows How		Discuss the mechanism of hypertension	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Pathology Materia Medica Organon
Hom UG-PB 6.40	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Record blood pressure at rest and in different grades of Exercise and postures	Measure the blood pressure in resting &different grade of exercise	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	OSCE	Medicine
Hom UG-PB 6.41			Knows How		Discuss the variation between different blood pressure values after measurement	Cognitive	Level 2 (Understanding)	Must know	CBL, Lecture, Small group discussion	Observation	OSCE	Medicine
Hom UG-PB 6.42	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Record pulse at rest and in different grades of Exercise and postures	Measure pulse at rest and in different grades of exercise	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	OSCE	Medicine
Hom UG-PB 6.43			Knows How		Discuss the variation between different arterial pulse value after measurement	Cognitive	Level 2 (Understand)	Must know	CBL, Lecture, Small group discussion	Observation	OSCE	Medicine

Hom UG-PB 6.44	Information Gathering, Integration of information, Problem Integration (K-2)		Shows How	Record ECG	Record ECG in a volunteer.	Psycho-motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	OSCE	Medicine
			Knows		Identify the features of a normal ECG.	Cognitive	Level 1 (Recall)	Nice to Know	CBL, Lecture, Small group discussion		OSCE	
Hom UG-PB 6.45	Information Gathering, Integration Of information, Problem Integration (K-2)		Shows How	Demonstrate the correct clinical examination of the cardio vascular system	Locate the Apex beat	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	OSCE	Human Anatomy
Hom UG-PB 6.46			Shows How		Auscultate for heart sound	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	OSCE	Medicine
Hom UG-PB 6.47			Shows How		Identify different heart sounds	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	OSCE	Medicine

Topic No	**7**
Theory	**Respiratory & Environmental Physiology**
Practical	
Clinical Physiology	**Respiratory System- Clinical Examination, Spirometry, Stethography**

Learning Outcomes: -

At the end of the chapter of Respiratory & Environmental Physiology, the student must be able to –

- Describe the functional anatomy of respiratory tract.
- Describe the mechanics of normal respiration
- Describe pressure changes during ventilation
- Describe lung volume and capacities
- Describe the transport of respiratory gases
- Describe the regulation of respiration
- Demonstrate the correct clinical examination of the respiratory system in a normal volunteer.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 7.1	Integration Of Information (K-1)	Respiratory & Environmental Physiology	Knows How	Describe the functional anatomy of respiratory tract	Identify the different parts of upper respiratory tract	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 7.2			Knows How		Describe the importance of different parts of lower respiratory tract	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 7.3			Knows How		Identify the different parts of tracheo – bronchial tree, Respiratory membrane & pleura	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 7.4			Knows How		Explain the properties of Gases	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	

Hom UG-PB 7.5			Knows How		Discuss non-respiratory function of respiratory system	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.6	Integration Of Information (K-1)		Knows How	Describe the mechanics of normal respiration	Discuss the mechanism of Inspiration	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 7.7			Knows How		Discuss the mechanism of Expiration	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 7.8	Integration Of Information (K-1)		Knows How	Describe pressure changes during ventilation	Discuss intra-pulmonary pressure	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.9			Knows How		Discuss intra pleural pressure	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.10	Integration Of Information. (K-1)		Knows How	Describe lung volume and capacities,	Discuss static lung volume & capacities	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.11			Knows How		Discuss dynamic lung volume and capacities	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.12	Integration Of Information (K-1)		Knows How	Describe alveolar surface tension	Define surface tension	Cognitive	Level 1 (Remember / recall)	Desirable To Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.13			Knows How		Discuss the significance of lung surfactant	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 7.14	Integration Of Information (K-1)		Knows How	Describe the transport of respiratory gases	Describe the Oxygen transportation	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 7.15			Knows How		Explain the carbon dioxide transportation	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	

Hom UG-PB 7.16	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the regulation of respiration	Discuss the nervous regulation of respiration	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 7.17			Knows How		Discuss the Chemical regulation of respiration	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 7.18			Knows How		Discuss the physio clinical aspect of Apnea	Cognitive	Level 2 Understand / interpret	Must know	PBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.19			Knows How		Discuss the physio clinical aspect of Dyspnoea, Asphyxia, Oxygen toxicity	Cognitive	Level 2 Understand / interpret	Must know	PBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine FMT Materia Medica
Hom UG-PB 7.20	Information Gathering ,Integration Of information, Problem Integration (K-2)		Know	Describe the physio clinical aspect of hypoxia	Define Hypoxia	Cognitive	Level 1 (Recall)	Must know	PBL, Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Medicine
Hom UG-PB 7.21			Knows		Classify hypoxia. Define Cyanosis	Cognitive	Level 1 Recall	Must know	PBL, Lecture, Small group discussion	MCQS, SAQs	SAQs, Viva Voce	Pathology Medicine
Hom UG-PB 7.22	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the principles and methods of artificial respiration,	Discuss the principles of artificial respiration	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.23			Knows How		Discuss the Methods of artificial respiration	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine

Hom UG-PB 7.24	Integration Of Information (K-1)		Knows How	Describe the physiology of high altitude and deep sea diving	Discuss the pressure changes during high altitude	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 7.25			Knows How		Discuss the effect during Rapid & slow ascent on high altitude	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 7.26			Knows How		Discuss the pressure changes during Deep sea diving	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 7.27	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Perform the clinical examination of the respiratory system in a normal volunteer	Perform the technique to assess normal respiratory rate, expansion of chest, in resting as well as exercise condition through inspection and palpation	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Medicine
Hom UG-PB 7.28			Shows How		Perform percussion on the chest	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Medicine
Hom UG-PB 7.29			Shows How		Perform the auscultation on different parts of lungs.	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Medicine

Topic No	**8**
Theory	**Central Nervous System**
Practical	
Clinical Physiology	**Nervous System- Clinical Examination**

Learning Outcomes: -

At the end of chapter of Central Nervous System, the student must be able to –

- Map the organization of nervous system.
- State the functions and properties of synapse.
- Explain the functions and properties of receptors
- Describe the functions and properties of reflex.
- Discuss the mechanism of chemical transmission in the nervous system.
- Describe somatic sensations & sensory tracts.
- Describe and discuss motor tracts & mechanism of maintenance of muscle tone.
- Describe the physiology of vestibular apparatus, Control of body movements, posture and equilibrium.
- Describe structure and functions of autonomic nervous system
- Explain the functions, lesion & sensory disturbance of Spinal cord

- Describe functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system
- Describe behavioural and EEG characteristic during Sleep.
- Describe the physiological basis of memory, learning and speech
- Perform the clinical examination of the nervous system in a volunteer or on a simulator.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 8.1	Integration Of Information (K-1)	Nervous System	Knows	Describe the organization of nervous system	Identify the parts of central nervous system – brain & spinal cord with its function	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 8.2			Knows How		Discuss the developmental aspect of central nervous system	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 8.3			Knows		Classify nervous system	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 8.4	Integration Of Information (K-1)		Knows How	Describe the functions and properties of synapse.	Illustrate the physiological anatomy of synapse	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 8.5			Knows How		Discuss the electrical events occurring at synapses	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
HomUG -PB 8.6			Knows How		Discuss the properties of synapse.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	

HomUG-PB 8.7	Integration Of Information (K-1)		Knows	Describe the functions and properties of receptors	Define receptor	Cognitive	Level 1 (Remember / recall)	Desirable to know	Lecture, Small group discussion	SAQs MCQs	SAQs Viva Voce	Anatomy
Hom UG-PB 8.8			Knows		Classify the sensory receptors.	Cognitive	Level 1 (Remember / recall)	Desirable to Know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 8.9			Knows How		Describe the Cutaneous receptor	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 8.10			Knows How		explain the properties of receptor	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 8.11	Integration Of Information (K-1)		Knows How	Describe the functions and properties of reflex.	Discuss reflex arc	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 8.12			Knows		Classify reflexes	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 8.13			Knows How		Discuss the properties of reflex	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 8.14	Integration Of Information (K-1)		Knows	Describe the mechanism of chemical transmission in the nervous system.	Classify neuro-transmitters	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 8.15			Knows How		Explain the different types of neuro-transmitter	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 8.16	Integration Of Information (K-1)		Knows	Describe somatic sensations & sensory tracts	Define sensory system	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 8.17			Knows How		Discuss different sensory tracts of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQ, Viva Voce	Anatomy

Hom UG-PB 8.18			Knows How		Describe the sensory tracts of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Medicine
Hom UG-PB 8.19			Knows How		Explain the somato-sensory cortex	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs Viva Voce	Anatomy Medicine
Hom UG-PB 8.20			Knows How		Explain the somatic sensation – touch, pressure, pain, temperature, proprioception	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion Demonstration	SAQs MCQs	SAQs, Viva Voce	Anatomy Medicine Materia Medica Repertory
Hom UG-PB 8.21	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe motor tracts & mechanism of maintenance of muscle tone	Discuss motor areas	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 8.22			Knows How		Discuss different motor tracts of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 8.23			Knows How		Discuss the motor tracts of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 8.24			Knows How		Discuss the clinical significance of Motor tracts of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Anatomy Medicine Materia Medica
Hom UG-PB 8.25	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the physiology of vestibular apparatus, Control of body movements, posture and equilibrium	Discuss the physiological anatomy of vestibular apparatus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 8.26			Knows How		Explain the functions of vestibular apparatus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Medicine Materia Medica

Hom UG-PB 8.27			Knows How		Discuss the common vestibular dysfunctions	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Medicine Materia Medica
Hom UG-PB 8.28	Integration Of Information (K-1)		Knows How	Describe structure and functions of Autonomic nervous system (ANS)	Differentiate between somatic and autonomic nervous system	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs MCQs	Viva Voce	Anatomy
Hom UG-PB 8.29			Knows How		Describe the divisions of Autonomic nervous system	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 8.30			Knows How		Discuss the responses of effector organ to autonomic nerve impulse	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 8.31	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows	Explain the functions, lesion & sensory disturbance of Spinal cord	List the functions of Spinal cord	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 8.32			Knows How		Illustrate the transection of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine, Surgery
Hom UG-PB 8.33			Knows How		Describe the sensory disturbances of spinal cord	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 8.34	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe functions of cerebral cortex, basal ganglia, thalamus, hypo - thalamus, cerebellum and limbic system	Discuss the connections & functions of cerebral cortex	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Medicine – Psychiatry Repertory
Hom UG-PB 8.35			Knows How		Discuss the connections& functions of Basal Ganglia	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Medicine – Psychiatry

Hom UG-PB 8.36			Knows How	and their abnormalities	Explain the connections & functions of Thalamus	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Medicine – Psychiatry Repertory
Hom UG-PB 8.37			Knows How		Explain the connections& functions of Hypothalamus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Medicine – Psychiatry Materia Medica Repertory
Hom UG-PB 8.38			Knows How		Discuss the connections & functions of Limbic system	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy, Psychology, Medicine – Psychiatry Materia Medica
Hom UG-PB 8.39			Knows How		Explain the connections& functions of Cerebellum	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Medicine – Psychiatry Materia Medica
Hom UG-PB 8.40			Knows How		Explain the cerebellar lesions	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Pathology Medicine – Psychiatry Materia Medica
Hom UG-PB 8.41	Integration Of Information (K-1)		Knows How	Describe behavioral and EEG characteristic during Sleep and mechanism responsible for its production	Discuss the importance of EEG	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 8.42			Knows How		Explain the Physiological Basis of EEG	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 8.43			Knows How		Discuss the factors affecting sleep	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine

Hom UG-PB 8.44			Knows How		Describe the Physiological changes during sleep	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 8.45			Knows		Classify the types of sleep	Cognitive	Level 1 (Remember / recall)	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Medicine
Hom UG-PB 8.46			Knows How		Discuss the factors controlling sleep cycle	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy Medicine
Hom UG-PB 8.47	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the physiological basis of memory, learning And speech	Discuss the mechanism and development of speech	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 8.48			Knows How		Describe the physiological basis of learning	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Medicine Materia Medica Repertory
Hom UG-PB 8.49			Knows How		Discuss the physiological basis of memory.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 8.50			Knows How		Discuss the applied physiology of memory	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Materia Medica Repertory
Hom UG-PB 8.51	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Perform the clinical examination of the nervous System : Higher functions, sensory system, motor system,	Perform examination of cranial nerves	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine
Hom UG-PB 8.52			Shows How		Perform examination for speech	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine
Hom UG-PB 8.53			Shows How		Conduct the assessment of muscle tone	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine

Hom UG-PB 8.54			Shows How	reflexes, cranial nerves in a normal volunteer or simulated Environment	Conduct the assessment of muscle power	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine
Hom UG-PB 8.55			Shows How		Perform the clinical examination for reflexes	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine
Hom UG-PB 8.56			Shows How		Perform Cutaneous sensory examination	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine
Hom UG-PB 8.57			Shows How		Perform the clinical examination of gait and posture	Psycho-motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist OSCE	Anatomy Medicine

Topic No	**9**
Theory	**Endocrine System**
Practical	
Clinical Physiology	**Reproductive System – Diagnosis of pregnancy**

Learning Outcomes: -

At the end of chapter of Endocrine System& Diagnosis of pregnancy, the student must be able –

- Explain the mechanism of action of steroid, protein and amine hormones.
- Describe the regulation of secretion of hormones by hypothalamus.
- Discuss the synthesis, secretion, Transport, Physiological action, regulation & effect of altered secretion of-Pituitary gland; Thyroid gland; Para Thyroid glands; Adrenal glands; and Pancreatic Gland.
- Explain the physiology of Thymus &Pineal Glands, and the local hormones.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 9.1	Integration Of Information (K-1)	Endocrine system	Knows	Describe the mechanism of action of steroid, protein And amine hormones	Define hormones	Cognitive	Level 1 (Remember/ recall)	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 9.2			Knows How		Discuss the characteristic of hormones	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Psychology
Hom UG-PB 9.3			Knows How		Classify the hormones as per their chemistry	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 9.4	Integration Of Information (K-1)		Knows How	Describe the regulation of secretion of hormones by hypothalamus	Discuss the regulation of hormone from the hypothalamus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 9.5			Knows How		Discuss the homoeostatic mechanism of secretion of hormone through Hypothalamus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine

Hom UG-PB 9.6	Integration Of Information (K-1)		Knows How	Discuss the synthesis, secretion, Transport, Physiological action, regulation & effect of altered secretion of Pituitary gland	Discuss the physiological anatomy of pituitary gland	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy Materia Medica
Hom UG-PB 9.7			Knows How		Explain the secretion of anterior pituitary hormone	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Anatomy Materia Medica
Hom UG-PB 9.8			Knows How		Explain the secretion of growth hormone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	
Hom UG-PB 9.9			Knows How		Describe the functions of growth hormone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	
Hom UG-PB 9.10			Knows		List the factors affecting growth hormone	Cognitive	Level 1Recall	Nice to know	Lecture, Small group discussion	SAQs MCQs	Viva Voce	
Hom UG-PB 9.11			Knows How		Discuss the effects of altered secretion of growth hormone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 9.12			Knows How		Explain the actions and control of secretion of prolactin	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy Obstetrics & Gynaecology
Hom UG-PB 9.13			Knows How		Discuss the secretion of posterior Pituitary hormones	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy

Hom UG-PB 9.14			Knows How		Explain the functions of ADH	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	
Hom UG-PB 9.15			Knows How		Discuss the functions of Oxytocin	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Medicine Obstetrics & Gynaecology
Hom UG-PB 9.16			Knows How		Describe pituitary insufficiency	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 9.17	Integration Of Information (K-1)		Knows How	Describe the synthesis, secretion, Transport, Physiological action, regulation & effect of altered secretion of Thyroid gland	Discuss the physiological anatomy of Thyroid gland	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Materia Medica Repertory
Hom UG-PB 9.18			Knows How		Describe the formation & secretion of thyroid hormone	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 9.19			Knows How		Explain the transport & metabolism of thyroid hormone	Cognitive	Level 2 Understand / interpret	Desirable to Know	CBL, Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 9.20			Knows How		Discuss the regulation and action of thyroid hormone	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 9.21			Knows How		Explain the effect of altered secretion of Thyroid hormone	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine

Hom UG-PB 9.22	Integration Of Information (K-1)		Knows How	Explain the synthesis, secretion, Transport, Physiological action, regulation & effect of altered secretion of Para Thyroid gland.	Discuss the calcium & phosphate metabolism	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Biochemistry Medicine Materia Medica
Hom UG-PB 9.23			Knows How		Discuss the action of parathormone	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 9.24			Knows How		Describe the action of Calcitonin	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 9.25			Knows How		Discuss the role of Calcitonin in the maintenance of calcium homoeostasis in body	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Biochemistry Medicine Materia Medica
Hom UG-PB 9.26			Calcitonir		Discuss the effect of altered secretion of para thyroid hormone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 9.27	Integration Of Information (K-1)		Calcitonir	Describe the synthesis, secretion, Transport, Physiological action, regulation & effect of altered secretion of Adrenal gland	Discuss the physiological anatomy of Adrenal Cortex gland	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy
Hom UG-PB 9.28			Calcitonir		Describe the formation, secretion, and functions of Glucocorticoid hormone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	

Hom UG-PB 9.29			Knows How		Describe the formation, secretion, and functions of Mineralocorticoid hormone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 9.30			Knows How		Describe the formation, secretion, and functions of Sex hormones	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 9.31			Knows How		Explain the effects of altered secretion of Adrenal cortex hormone	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 9.32			Knows How		Discuss the physiological anatomy of Adrenal Medullary gland	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 9.33	Integration Of Information (K-1)		Knows How	Describe the synthesis, secretion, Transport, Physiological action, regulation & effect of altered secretion of Pancreatic Gland	Explain the physiological anatomy of Pancreatic gland	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Materia Medica
Hom UG-PB 9.34			Knows How		Discuss the action and regulation of Glucagon	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 9.35			Knows How		Discuss the action and regulation of Insulin	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine Materia Medica

Hom UG-PB 9.36			Knows How		Describe the effects of altered secretion of Pancreatic Hormone	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Pathology Medicine
Hom UG-PB 9.37	Integration Of Information (K-1)		Knows How	Describe the physiology of Thymus & Pineal Gland	Describe the functions of hormone of thymus gland	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 9.38			Knows How		Discuss the functions of hormone of pineal gland	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	
Hom UG-PB 9.39			Knows How	Describe the Physiology of Local hormones	State the functions of Local hormones	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs MCQs	Viva Voce	
Hom UG-PB 9.40	Information Gathering ,Integration Of information , Problem Integration (K-2)		Shows How	Describe the diagnosis of pregnancy	Demonstrate the diagnosis of pregnancy through Urine pregnancy Strip	Psycho Motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Obs&Gynec

SEMESTER – 3

Topic No	**10**
Theory	**Reproductive System**
Practical	
Clinical Physiology	

Learning Outcomes: -

At the end of the chapter on Reproductive System, the student must be able to –

- Describe the onset, progression, and stages puberty.
- Describe the structure and functions of male reproductive system.
- Describe the physiological effects of male sex hormone.
- Describe female reproductive system & functions of ovary and its Control.
- Describe menstrual cycle with hormonal, uterine and ovarian changes.
- Describe the physiological effects of female sex hormones.
- Discuss the contraceptive methods for male and female.
- Discuss the physiology of pregnancy, parturition & lactation.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 10.1	Integration Of Information (K-1)	Reproductive System	Knows	Describe the onset, progression, and stages	Define puberty	Cognitive	Level 1 (Remember / recall)	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Psychology Obstetrics & Gynaecology

Hom UG-PB 10.2			Knows How	puberty. List causes and expressions of early and delayed puberty	Discuss the role of LH & FSH in development of puberty	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Psychology Obstetrics & Gynaecology
Hom UG-PB 10.3			Knows How		Explain puberty for its onset, and stages. Describe the causes for delayed &precocious puberty.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Psychology Obstetrics & Gynaecology
Hom UG-PB 10.4	Integration Of Information (K-1)		Knows How	Describe the structure and functions of male reproductive system.	Describe the structure of male reproductive system	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy
Hom UG-PB 10.5			Knows How		Explain the function of male reproductive system.	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 10.6	Integration Of Information (K-1)		Knows How	Describe the physiological effects of male sex hormone	Explain the functions of testis as an endocrine gland.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	SAQs, Viva Voce	Psychology Medicine
Hom UG-PB 10.7			Knows How		Discuss the role of testosterone	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine Obstetrics & Gynaecology
Hom UG-PB 10.8	Integration Of Information (K-1)		Knows How	Describe the functions of testis and control of Spermatogenesis & factors modifying it	Discuss the process of spermatogenesis	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 10.9			Knows How		Discuss the factors affecting spermatogenesis	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	

Hom UG-PB 10.10	Integration Of Information (K-1)		Knows How	Describe female reproductive system & functions of ovary and its Control.	Describe structure the female reproductive tract	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Obstetrics & Gynaecology
Hom UG-PB 10.11			Knows How		Discuss the functions of female reproductive tract	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.12			Knows How		Discuss the role of ovary as an endocrine gland. List the hormones secreted by ovary.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.13	Integration Of Information (K-1)		Knows How	Describe menstrual cycle with hormonal, uterine and ovarian changes	Discuss the ovarian changes during menstrual cycle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.14			Knows How		Discuss the Uterine changes during menstrual cycle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs MCQs	LAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.15			Knows How		Discuss the Vaginal changes during menstrual cycle	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.16	Integration Of Information (K-1)		Knows How	Describe the physiological effects of female sex hormones	Discuss the Gonadotrophin changes during menstrual cycle	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Obstetrics & Gynaecology Materia Medica
Hom UG-PB 10.17			Knows How		Discuss the changes during menopause	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Obstetrics & Gynaecology

Hom UG-PB 10.18			Knows How	Discuss the contraceptive methods for male and female.	Describe the contraceptive methods for male	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	Viva Voce	Obstetrics & Gynaecology Community Medicine
Hom UG-PB 10.19			Knows How		Describe the contraceptive methods for female	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	Viva Voce	Obstetrics & Gynaecology Community Medicine
Hom UG-PB 10.20	Integration Of Information (K-1)		Knows How	Discuss the physiology of pregnancy, parturition & lactation.	Discuss the fertilization & implantation of ovum	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.21			Knows How		Explain the role of placenta as an endocrine organ. List the placental hormones	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.22			Knows How		Discuss the process of parturition	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Obstetrics & Gynaecology Materia Medica
Hom UG-PB 10.23			Knows How		Describe the role of prolactin Hormone	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Obstetrics & Gynaecology
Hom UG-PB 10.24			Knows How		Explain the process of lactation	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Obstetrics & Gynaecology Community Medicine Materia Medica

Topic No	**11**
Theory	**Special Senses**
Practical	
Clinical Physiology	**Special Senses – Clinical Examination**

Learning Outcomes: -

At the end of the chapter on Special senses, the student must be able to –

- Discuss perception of smell and taste sensation
- Discuss patho-physiology of altered smell and taste sensation
- Discuss functional anatomy of ear and auditory pathways & physiology of hearing
- Discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex
- Discuss the physiological basis of lesion in visual pathway
- Demonstrate the testing of visual acuity, colour and field of vision; hearing; smell; and taste sensation in volunteer or simulated environment

S.No	Generic competency	Subject area	Miller's Level	Specific Competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 11.1	Integration Of Information (K-1)	Special Senses	Knows How	Describe the perception of smell sensation	Discuss the sensation of olfaction	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Surgery - ENT
Hom UG-PB 11.2			Knows How		Discuss the olfactory receptor, olfactory pathway	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQ, Viva Voce	Anatomy
Hom UG-PB 11.3			Knows How		Discuss the physiology of olfaction	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 11.4			Knows How		Discuss the altered sensation of smell	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 11.5	Integration Of		Knows How	Describe perception of taste sensation	Discuss the sensation of Taste	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Surgery – ENT

	Information (K-1)											Materia Medica Repertory
Hom UG-PB 11.6			Knows How		Discuss the taste receptor.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQ, Viva Voce	Anatomy
			Shows How		Draw the taste pathway	Psycho motor	Level 2. Control	Must Know	Demonstration	Observation	DOPS	Anatomy
Hom UG-PB 11.7			Knows How		Discuss the physiology of Taste	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 11.8			Knows How		Discuss the altered sensation of Taste	Cognitive	Level 2 Understand / interpret	Desirable to know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine Materia Medica
Hom UG-PB 11.9	Integration Of Information (K-1)		Knows How	Describe the functional anatomy of ear & auditory pathways	Describe the physiological anatomy of ear	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Surgery – ENT Materia Medica
Hom UG-PB 11.10			Shows How		Map the Auditory Pathway	Psycho motor	Level 2. Control	Must Know	Demonstration	Observation	Checklist	Anatomy ENT
Hom UG-PB 11.11			Knows How		Describe the mechanism of hearing	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Surgery - ENT
Hom UG-PB 11.12			Knows How		Discuss the altered sensation of Hearing	Cognitive	Level 2 Understand / interpret	Must know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine Surgery – ENT Materia Medica
Hom UG-PB 11.13	Integration Of Information (K-1)		Knows How	Describe the functional anatomy of eye	Explain the structure & function of eye.	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Surgery - Ophthalmology

Hom UG-PB 11.14	Integration Of Information (K-1)		Knows How	Describe the physiology of image formation	Describe the visual pathway	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 11.15			Knows How		Discuss the principles of optics, visual acuity, Visual reflex	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Surgery – Ophthalmology
Hom UG-PB 11.16	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the physiology of vision including colour vision	Discuss the photochemistry of vision	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Surgery – Ophthalmology
Hom UG-PB 11.17			Knows How		Discuss the photopic & scotopic vision	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Surgery – Ophthalmology
Hom UG-PB 11.1. 8			Knows How		Discuss the visual adaptation, visual accommodation & night blindness	Cognitive	Level 2 Understand / interpret	Desirable to know	PBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Surgery – Ophthalmology Materia Medica
Hom UG-PB 11.19	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the refractive errors and colour blindness	Discuss the different types of refractive errors	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Surgery – Ophthalmology Materia Medica Repertory
Hom UG-PB 11.20			Knows How		Discuss the colour blindness	Cognitive	Level 2 Understand / interpret	Desirable to know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Surgery – Ophthalmology Materia Medica
Hom UG-PB 11.21			Knows		List the causes of Nystagmus	Cognitive	Level 1Recall	Nice to know	CBL, Lecture, Small group discussion	SAQs	Viva Voce	Surgery – Ophthalmology

												Materia Medica
Hom UG-PB 11.22	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Demonstrate Testing of visual acuity, colour and field of vision in a volunteer	Perform the testing of visual acuity, colour and field of vision	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Surgery – Ophthalmology
Hom UG-PB 11.23			Knows How		Interpret the testing of visual acuity, colour and field of vision	Cognitive	Level 2 Understand / interpret	Nice to know	CBL, Lecture, Small group discussion	SAQs	Viva Voce	Surgery – Ophthalmology Materia Medica
Hom UG-PB 11.24	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Demonstrate testing of hearing in a volunteer	Perform the testing of hearing in a volunteer	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Surgery – ENT
Hom UG-PB 11.25			Knows How		Interpret the testing of hearing in a volunteer	Cognitive	Level 2 Understand / interpret	Nice to know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Surgery – Ophthalmology Materia Medica
Hom UG-PB 11.26	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Demonstrate testing for smell in a volunteer	Perform testing for smell in a volunteer	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Surgery – ENT
Hom UG-PB 11.27			Knows How		Interpret testing for smell in a volunteer	Cognitive	Level 2 Understand / interpret	Nice to know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Surgery – Ophthalmology Materia Medica
Hom UG-PB 11.27	Information Gathering, Integration Of information, Problem Integration (K-2)		SHOW HOW	Demonstrate testing for taste sensation in volunteer	Perform testing for taste sensation in volunteer	Psycho Motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Anatomy Surgery – ENT
Hom UG-PB 11.29			Knows How		Interpret testing for taste sensation in volunteer	Cognitive	Level 2 Understand / interpret	Nice to know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Surgery – ENT

Topic No	**12**
Theory	**Digestive System & Nutrition**
Practical	**Liver Function Test**
Clinical Physiology	**Gastrointestinal system clinical examination**

Learning Outcomes: -

At the end of the chapter Digestive system & Nutrition, the student must be able to –

- Describe the structure, Function & Innervation of digestive system.
- Describe the composition, mechanism of secretion, function & regulation of saliva.
- Describe the movement of oesophagus.
- Describe the composition, mechanism of secretion, function & regulation of gastric juice.
- Describe the composition, mechanism of secretion, function & regulation of pancreatic juice.
- Describe the structure & function of liver & Gall bladder.
- Describe the composition, mechanism of secretion, function & regulation of Bile.
- Describe the composition, mechanism of secretion, function & regulation of Small Intestine.
- Describe the movement of gastrointestinal tract, it's regulation & function.
- Describe the movement of large intestine & defecation as a process.

- Describe the physiology of digestion and absorption of nutrients.
- Observe the procedure for Liver Function Test.
- Perform examination for gastrointestinal system on a volunteer.

S.No	Generic competency	Subject area	Miller's Level	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 12.1	Integration Of Information (K-1)	Digestive System & Nutrition	Knows How	Describe the structure, Function & Innervation of digestive system	Discuss the importance of digestive system	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.2			Knows		Recall the structure of digestive system	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.3			Knows		Recognize the structure of small intestine	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.4			Knows		Identify the structure of large intestine	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.5	Integration Of Information (K-1)		Knows	Describe the composition, mechanism of secretion, function & regulation of saliva	Classify salivary glands. Mention the innervation of salivary glands.	Cognitive	Level 1 Recall	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Materia Medica
Hom UG-PB 12.6			Knows How		Discuss composition of saliva	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Biochemistry
Hom UG-PB 12.7			Knows How		Discuss functions of saliva	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine Materia Medica
Hom UG-PB 12.8			Knows How		Describe mechanism of salivary secretion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	

Hom UG-PB 12.9			Knows How		Discuss the control of salivary secretion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.10			Knows How		Explain the clinical relevance of salivary gland & salivary secretion	Cognitive	Level 2 Understand / interpret	Desirable to Know	PBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Materia Medica
Hom UG-PB 12.11	Integration Of Information (K-1)		Knows How	Describe the movement of oesophagus	Describe the process of mastication.	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 12.12			Knows How		Explain the stages of swallowing	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 12.13			Knows How		Discuss the role of upper & lower oesophageal sphincter	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 12.14			Knows		List the common oesophageal motility disorders	Cognitive	Level 1 Recall	Nice to Know	CBL, Lecture, Small group discussion	SAQs	Viva Voce	Medicine Surgery
Hom UG-PB 12.15	Integration Of Information (K-1)		Knows	Describe the composition, mechanism of secretion, function & regulation of Gastric Juice	Recall the macro and micro structure of stomach	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.16			Knows How		Discuss the functions of stomach	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 12.17			Knows How		Discuss the composition & functions of gastric juice	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Biochemistry

Hom UG-PB 12.18			Knows How		Discuss the mechanism & regulation of gastric juice secretion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 12.19			Knows How		Discuss the process of digestion in stomach	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.20			Knows How		Discuss the movements of stomach	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.21			Knows		Mention the three phases of vomiting	Cognitive	Level 1 Recall	Nice to know	CBL, Lecture, Small group discussion	SAQs	Viva Voce	Medicine Materia Medica Repertory
Hom UG-PB 12.22	Integration Of Information (K-1)		Knows	Describe the composition, mechanism of secretion, function & regulation of Pancreatic Juice	Recall the macro and micro structure of Pancreas	Cognitive	Level 1 Recall	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 12.23			Knows How		Discuss the composition & functions of pancreatic juice	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Biochemistry
Hom UG-PB 12.24			Knows How		Discuss the mechanism & regulation of pancreatic juice secretion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 12.25			Knows How		Describe exocrine pancreatic insufficiency	Cognitive	Level 2 Understand / interpret	Desirable to Know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine Materia Medica Repertory
Hom UG-PB 12.26	Integration Of Information (K-1)		Knows How	Describe the structure & function of	Discuss the structure & functions of Liver	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy

Hom UG-PB 12.27			Knows How	liver & Gall bladder	Explain the signs of liver insufficiency	Cognitive	Level 2 Understand / interpret	Desirable to Know	CBL, Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Medicine
Hom UG-PB 12.28			Knows How		Describe the structure & functions of gall bladder	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Repertory
Hom UG-PB 12.29	Integration Of Information (K-1)		Knows How	Describe the composition, mechanism of secretion, function & regulation of Bile	Discuss the composition & function of liver bile	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 12.30			Knows How		Discuss the composition & function of gall bladder bile	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Biochemistry
Hom UG-PB 12.31			Knows How		Describe the control & mechanism of bile secretion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.32			Knows How		Describe the clinical significance of liver functions.	Cognitive	Level 2 Understand / interpret	Desirable to know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Materia Medica
Hom UG-PB 12.33			Knows How		Describe the clinical significance of Gall Bladder functions	Cognitive	Level 2 Understand / interpret	Desirable know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Surgery
Hom UG-PB 12.34	Integration Of Information (K-1)		Knows	Describe the composition, mechanism of secretion, function & regulation of Small intestine	Recognise the macro and micro structure of Small intestine	Cognitive	Level 1 Recall	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Repertory
Hom UG-PB 12.35			Knows How		Discuss the composition &	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Biochemistry

					functions of Succus Entericus							
Hom UG-PB 12.36			Knows How		Discuss the mechanism & regulation of secretions of Succus Entericus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.37			Knows How		Describe the process of digestion in small intestine	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.37			Knows How		Describe the Malabsorption Syndrome	Cognitive	Level 2 Understand / interpret	Nice to Know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine Materia Medica
Hom UG-PB 12.39	Integration Of Information (K-1)		Knows How	Describe the movement of gastrointestinal tract, it's regulation & function.	Explain peristalsis as intestinal movement	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Materia Medica
Hom UG-PB 12.40			Knows How		Describe segmentation as intestinal movement	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.41			Knows How		Discuss the clinical importance of small intestine	Cognitive	Level 2 Understand / interpret	Desirable to Know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 12.42	Integration Of Information (K-1)		Knows How	Describe the movement of large intestine & defecation as a process.	Discuss the movements of large intestine	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 12.43			Knows How		Describe the process of absorption &secretion in large intestine	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Materia Medica
Hom UG-PB 12.44			Knows How		Discuss the process of defecation	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Repertory

Hom UG-PB 12.45			Knows How		Discuss the clinical significance of large intestine	Cognitive	Level 2 Understand / interpret	Desirable to know	CBL, Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Medicine
Hom UG-PB 12.46	Integration Of Information (K-1)		Knows How	Describe the physiology of digestion and absorption of nutrients	Discuss the digestion & absorption of carbohydrates	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.47			Knows How		Discuss the digestion & absorption of Fats	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 12.48			Knows How		Discuss the digestion & absorption of Proteins	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs SAQs	LAQs, Viva Voce	
Hom UG-PB 12.49			Knows How		Discuss absorption of water, electrolytes	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	
Hom UG-PB 12.50			Knows How		Describe the absorption of vitamins & minerals	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	
Hom UG-PB 12.51	Information Gathering ,Integration Of information, Problem Integration (K-2)		Shows How	Observe the process of conducting liver function test	Observe the liver function test	Psycho Motor	Level 1 (Observe / Imitate)	Nice to know	Demonstration	Observation	Checklist	Medicine
Hom UG-PB 12.52	Information Gathering ,Integration Of		Shows How	Demonstrate the Gastrointestinal system	Perform the inspection of gastrointestinal system in the	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Anatomy Medicine

	information, Problem Integration (K-2)			examination	clinical examination							
Hom UG-PB 12.53			Knows How		Interpret the findings of inspection of gastrointestinal system in clinical examination	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 12.54			Shows How		Perform the palpation of gastrointestinal system in the clinical examination	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Anatomy Medicine
Hom UG-PB 12.55			Knows Ho		Interpret the findings of palpation of gastrointestinal system in clinical examination	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 12.56			Shows How		Perform the percussion of gastrointestinal system in the clinical examination	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Anatomy Medicine
Hom UG-PB 12.57			Knows Ho		Interpret the findings of percussion of gastrointestinal system in clinical examination	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 12.58			Shows How		Perform the auscultation of gastrointestinal system in the	Psycho Motor	Level 2 (Control)	Desirable to know	Demonstration	Observation	Checklist	Anatomy Medicine

					clinical examination							
Hom UG-PB 12.59			Knows How		Interpret the findings of auscultation of gastrointestinal system in clinical examination	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy Medicine

Topic No	**13**
Theory	**Renal Physiology**
Practical	**Kidney Function Test**

Clinical Physiology	

Learning Outcomes: -

At the end of the chapter Renal Physiology, the student must be able to –

- Describe structure & functions of the kidneys.
- Explain the role of renin-angiotensin system.
- Describe the mechanism of urine formation.
- Describe the process of filtration, secretion & reabsorption in kidney.
- Describe the concentration and diluting mechanism in the kidney.
- Describe the renal regulation of acid-base balance.
- Describe the physiology of micturition.
- Describe the Renal Function Tests.

S.No	Generic competency	Subject area	Miller's Level	Specific Competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-PB 13.1	Integration Of Information (K-1)	Renal Physiology	Knows	Describe structure & functions of the kidneys.	Recognize the structure of kidney & nephron	Cognitive	Level 1 Recall	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Materia Medica
Hom UG-PB 13.2			Knows How		Discuss the functions of kidney	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 13.3			Knows How		Discuss the organization and function of glomerulus	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Anatomy Medicine
Hom UG-PB 13.4			Knows		Classify the type of nephrons	Cognitive	Level 1 Recall	Must Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Anatomy
Hom UG-PB 13.5			Knows How		Describe the structure and functions of	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy

					juxtaglomerular apparatus							
Hom UG-PB 13.6	Integration Of Information (K-1)		Knows How	Explain the role of renin – angiotensin system	Explain the secretions from juxtaglomerular apparatus & their regulation	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 13.7	Integration Of Information (K-1)		Knows How	Describe the mechanism of urine formation	Explain the process of glomerular filtration	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 13.8			Knows How		Describe the regulation of Glomerular Filtration Rate	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 13.9			Knows How		Discuss the mechanism of GFR. Explain the factors affecting GFR	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 13.10	Integration Of Information (K-1)		Knows How	Describe the process of filtration, secretion & reabsorption in kidney	Discuss the general considerations of reabsorption & secretion	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	MCQs	LAQs, Viva Voce	Medicine Biochemistry
Hom UG-PB 13.11			Knows How		Describe the renal transport mechanisms throughout the tubular segments	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 13.12			Knows How		Describe the transport of individual substances in different	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	MCQs	Viva Voce	

					segments of renal tubule							
Hom UG-PB 13.13	Integration Of Information (K-1)		Knows How	Describe the concentration and diluting mechanism in the kidney	Discuss the general consideration of urine concentration mechanism	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Medicine
Hom UG-PB 13.14			Knows How		Describe the counter current multipliers	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	Biochemistry
Hom UG-PB 13.15			Knows How		Discuss the counter current exchangers	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	MCQs	SAQs, Viva Voce	
Hom UG-PB 13.16	Information Gathering ,Integration Of information, Problem Integration (K-2)		Knows How	Describe the renal regulation of acid – base balance	Discuss the renal regulation of acid-base balance	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Biochemistry
Hom UG-PB 13.17			Knows How		Describe the buffer system in the kidney	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Biochemistry
Hom UG-PB 13.18	Integration Of Information (K-1)		Knows	Describe the physiology of micturition	Define micturition	Cognitive	Level 1 (Remember / recall)	Desirable to Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 13.19			Knows How		Discuss the nerve supply of urinary bladder	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	Anatomy
Hom UG-PB 13.20			Knows How		Describe the micturition reflex	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Anatomy
Hom UG-PB 13.21	Information Gathering ,Integration Of information, Problem		Shows How	Describe the Kidney function teste	Perform the physical, chemical, and microscopical examination of urine	Psycho Motor	Level 2 (Control)	Must know	Demonstration	Observation	OSCE	Biochemistry

Hom UG-PB 13.22	Integration (K-2)		Knows How		Recognize the normal values of physical, chemical, and microscopical examination of urine	Cognitive	Level 2 Understand / interpret)	Must know	Lecture, Small group discussion	SAQs	LAQ, Viva Voce	Biochemistry
Hom UG-PB 13.23			Shows How		Perform examination for the abnormal constituents of urine	Psycho Motor	Level 2 (Control)	Must know	Demonstration	Observation	Checklist	Biochemistry Medicine
Hom UG-PB 13.24			Knows How		Interpret the results of examination for the abnormal constituents of urine	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQ, Viva Voce	Biochemistry Medicine
Hom UG-PB 13.25			Knows How		Interpret the renal clearance test for glomerular function	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQ, Viva Voce	Biochemistry Medicine
Hom UG-PB 13.26			Knows How		Interpret the renal clearance test for Tubular function.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	LAQ, Viva Voce	Biochemistry Medicine

Topic No	**14**
Theory	**Biochemistry**
Practical	**Biochemistry Practical of carbohydrate, lipid, protein, Urine normal & abnormal constituents**
Clinical Physiology	

Learning Outcomes: -

At the end of the chapter Biochemistry, the student must be able to –

- Describe the lipid, carbohydrate, and protein metabolisms.
- Describe the enzymes and their activities.
- Describe the role of Vitamins.
- Perform the quantitative estimation of Glucose, Total Proteins, Uric Acid in Blood.
- Perform the Lipid Profile.

S.No	Generic competency	Subject area	Miller's Level	Specific Competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summative Assessment	Integration - Horizontal / Vertical / Spiral

Hom UG-PB 14.1	Integration Of Information (K-1)	Biochemistry	Knows How	Describe the lipid Metabolism.	Explain the biosynthetic and catabolic pathways	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	Viva Voce	
Hom UG-PB 14.2			Knows How		Explain the importance of lipids in the body.	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.3			Knows How		Explain the different properties of lipids.	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.4	Integration Of Information (K-1)		Knows How	Describe the Carbohydrate metabolism	Discuss different types of carbohydrates.	Cognitive	Level 2 Understand / interpret	Must know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.5			Knows		List major functions of carbohydrates.	Cognitive	Level 1Recall	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.6			Knows How		Discuss the food sources of carbohydrates.	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.7			Knows How		Explain the processes of glycolysis	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 14.8			Knows How		Explain the process of gluconeogenesis	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 14.9			Knows How		Describe the process of ATP production through	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	

					oxidative phosphorylation							
Hom UG-PB 14.10	Integration Of Information (K-1)		Knows How	Describe the Protein Metabolism	Discuss the special features of protein Metabolism	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.11			Knows How		Discuss the functions of intact amino acid	Cognitive	Level 2 Understand / interpret	Nice to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.12			Knows How		Discuss the oxidation of amino acid	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	
Hom UG-PB 14.13			Knows How		Discuss the synthesis of proteins	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	LAQs, Viva Voce	Physiology
Hom UG-PB 14.14			Knows How		Discuss the function of nitrogenous part	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.15			Knows How		Discuss the exogenous & endogenous protein metabolism	Cognitive	Level 2 Understand / interpret	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.16	Integration Of Information (K-1)		Knows How	Describe the enzymes and their activities.	Discuss the concept of enzyme, chemical reactions, catalyst and substrates.	Cognitive	Level 2 Understand / interpret	Desirable to know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Physiology
Hom UG-PB 14.17			Knows		Mention the major functions of enzymes.	Cognitive	Level 1Recall	Must Know	Lecture, Small	SAQs	LAQs, Viva Voce	Physiology

									group discussion			
Hom UG-PB 14.18			Knows How		Discuss the importance of enzymes in the body.	Cognitive	Level 2 Understand / interpret	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Physiology
Hom UG-PB 14.19	Integration Of Information (K-1)		Knows	Describe the role of Vitamins	Define vitamin	Cognitive	Level 1 (Remember / recall)	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Physiology Community Medicine
Hom UG-PB 14.20			Knows		Classify vitamins	Cognitive	Level 1Recall	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.21			Knows		Mention common vitamin deficiencies		Level 1Recall	Desirable to Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	Physiology Medicine Community Medicine
Hom UG-PB 14.22	Information Gathering , Integration Of information , Problem Integration (K-2)		Knows	Demonstration of Uses Of Instruments Or Equipment	List the use of different instruments in biochemistry experiments	Cognitive	Level 1 Recall	Must Know	Lecture, Small group discussion	SAQs	SAQs, Viva Voce	
Hom UG-PB 14.23			Shows How	Demonstrate the Qualitative Analysis of Carbohydrates , Proteins And Lipids	Perform the qualitative analysis of carbohydrate	Psycho Motor	Level 2 (Control)	Must Know	Demonstration	Observation	Checklist	Pathology
Hom UG-PB 14.24			Knows How		Interpret the results of Qualitative analysis of carbohydrate	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion	SAQs	Viva Voce	Pathology
Hom UG-PB 14.25			Shows How		Observe the qualitative analysis of Protein	Psycho Motor	Level 1 (Observe / Imitate)	Desirable to Know	Demonstration	Observation	Checklist	Pathology

Hom UG-PB 14.26			Knows How		Interpret the results of Qualitative analysis of Protein	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion	SAQs	Viva Voce	Pathology
Hom UG-PB 14.27			Shows How		Perform the qualitative analysis of Lipid	Psycho Motor	Level 2 (Control)	Nice to Know	Demonstration	Observation	Checklist	Pathology
Hom UG- PB 14.28			Knows How		Interpret the results of Qualitative analysis of Lipid	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion	SAQs	Viva Voce	Pathology
Hom UG-PB 14.29	Information Gathering ,Integration Of information , Problem Integration (K-2)		Shows How	Perform the quantitative estimation of Glucose, Total Proteins, Uric Acid in Blood	Perform the Quantitative estimation of glucose	Psycho Motor	Level 3 (Automatism)	Must Know	Demonstration	Observation	Checklist	Pathology
Hom UG-PB 14.30			Knows How		Interpret the results of Qualitative analysis of glucose	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion	SAQs	Viva Voce	Pathology
Hom UG-PB 14.31			Shows How		Perform the Quantitative estimation of Total proteins	Psycho Motor	Level 3 (Automatism)	Must Know	Demonstration	Observation	Checklist	Pathology
Hom UG-PB 14.32			Knows How		Interpret the results of Qualitative analysis of total protein	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion	SAQs	Viva Voce	Pathology
Hom UG-PB 14.33			Shows How		Observe the Quantitative estimation of Uric Acid	Psycho Motor	Level 1 (Observe / Imitate)	Nice to Know	Demonstration	Observation	Checklist	Pathology
Hom UG-PB 14.34			Knows How		Interpret the results of Quantitative	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small	SAQs	SAQs, Viva Voce	Pathology

					estimation of Uric acid				group discussion			
Hom UG-PB 14.35			Shows How	Perform the Lipid Profile	Observe the laboratory testing for Lipid profile	Psycho Motor	Level 1 (Observe / Imitate)	Must Know	Demonstration	Observation	OSCE	Pathology
Hom UG-PB 14.36			Knows How		Interpret the results of Lipid profile testing done in a laboratory	Cognitive	Level 2 Understand / interpret	Nice to Know	Lecture, Small group discussion	SAQs	Viva Voce	Pathology

Asse

8. PRACTICAL TOPICS

PRACTICAL & CLINICAL PHYSIOLOGY:-

No	Practical	Demonstration / Performance
HAEMATOLOGY		
1	Study of the Compound Microscope	Performance
2.	Collection of Blood Samples	Performance
3	Estimation of Haemoglobin Concentration	Performance
4	Determination of Haematocrit	Demonstration
5	Hemocytometry	Performance
6	Total RBC Count	Performance
7	Determination of RBC Indices	Demonstration
8	Total Leucocytes Count (TLC)	Performance
9	Preparation And Examination Of Blood Smear	Performance
10	Differential Leucocyte Count (DLC)	Performance
11	Absolute Eosinophil Count	Demonstration
12	Determination of Erythrocyte Sedimentation Rate	Demonstration
13	Determination of Blood Groups	Performance
14	Determination of Bleeding Time and Coagulation Time	Performance
BIOCHEMISTRY		
1	Demonstration of Uses Of Instruments Or Equipment	Demonstration
2	Qualitative Analysis of Carbohydrates, Proteins And Lipids	Performance
3	Normal Characteristics of Urine	Performance
4	Abnormal Constituents of Urine	Performance
5	Quantitative Estimation of Glucose, Total Proteins, Uric Acid in Blood	Performance
6	Liver Function Tests	Demonstration

7	Kidney Function Tests	Demonstration
8	Lipid Profile	Demonstration
9	Interpretation and Discussion of Results of Biochemical Tests	Demonstration
CLINICAL PHYSIOLOGY & OPD		
1	Case Taking & Approach to pt	Performance
2	General Concept Of Examination	Performance
3	Examination of muscles, joints,	Performance
4	Cardio-Vascular System – Blood Pressure Recording, Radial Pulse, ECG, Clinical Examination	Performance
5	Respiratory System- Clinical Examination, Spirometry, Stethography	Performance
6	Nervous System- Clinical Examination	Performance
7	Special Senses- Clinical Examination	Performance
8	Reproductive System- Diagnosis of Pregnancy	Performance
9	Gastrointestinal System- Clinical Examination	Performance
10	OPD (Applied Physiology)	Demonstration & Performance

9. ASSESSMENT

PHYSIOLOGY THEME TABLE

PAPER – 1

Theme*	Topics	Term	Marks	MCQ's	SAQ's	LAQ's
A	General Physiology	I	07	Yes	Yes	No
B	Biophysics Science	I	07	Yes	Yes	No
C	Body fluids& Immune Mechanism	I	16	Yes	Yes	Yes
D	Cardiovascular system	II	16	Yes	Yes	Yes
E	Respiratory system	II	16	Yes	Yes	Yes
F	Excretory system	III	16	Yes	Yes	Yes
G	Skin & The Integumentary System	I	11	Yes	Yes	No
H	Nerve Muscle physiology system	I	11	Yes	Yes	No

QUESTION PAPER BLUE PRINT

UNIVERSITY EXAM PAPER-I – 100 MARKS

MCQs – 10 Marks. SAQs – 50 Marks. FAQs – 40 Marks

Question Serial Number	Type of Question	Question Paper Format (Refer Theme table for themes)
Q1	Multiple choice Questions (MCQ) All questions compulsory 1 mark each	1. Theme A 2. Theme A 3. Theme B 4. Theme B 5. Theme C 6. Theme D 7. Theme E 8. Theme F 9. Theme G 10. Theme H
Q2	Short answer Questions(SAQ)	1. Theme A

	All questions compulsory 5 Marks Each	2. Theme B 3. Theme C 4. Theme D 5. Theme E 6. Theme F 7. Theme G 8. Theme G 9. Theme H 10. Theme H
Q3	Long answer Questions (LAQ) All questions compulsory 10 marks each	1. Theme C 2. Theme D 3. Theme E 4. Theme F

PAPER – 2

Theme*	Topics	Term	Marks	MCQ's	SAQ's	LAQ's
A	Endocrine system	II	21	Yes	Yes	Yes
B	Central Nervous System	II	21	Yes	Yes	Yes
C	Digestive system and Nutrition	III	21	Yes	Yes	Yes
D	Reproductive system	III	17	Yes	Yes	Yes
E	Sense organs	III	12	Yes	Yes	No
F	Biochemistry	III	08	Yes	Yes	No

UNIVERSITY EXAM PAPER-II – 100 MARKS
MCQs – 10 Marks. SAQs – 50 Marks. FAQs – 40 Marks

Question Serial Number	Type of Question	Question Paper Format (Refer Theme table for themes)

Q1	Multiple choice Questions (MCQ) All questions compulsory 1 mark each	1) Theme A 2) Theme B 3) Theme C 4) Theme D 5) Theme D 6) Theme E 7) Theme E 8) Theme F 9) Theme F 10) Theme F
Q2	Short answer Questions (SAQ) All questions compulsory 5 Marks Each	1) Theme A 2) Theme A 3) Theme B 4) Theme B 5) Theme C 6) Theme C 7) Theme D 8) Theme E 9) Theme E 10) Theme F
Q3	Long answer Questions (LAQ) All questions compulsory 10 marks each	1) Theme A 2) Theme B 3) Theme C 4) Theme D

Distribution of Marks for Practical Exam:

Practical Exam: 100 Marks	
Haematology	20 marks
Bio-chemistry	20 marks
Clinical Physiology	20 marks
Spotting	30 marks
Journal	10 marks
Viva: 80 Marks	
Viva Voce	80 marks
Internal Assessment: 20	
IA	20

The Pass Marks in Each Component of the Examination shall be 50%.

9B - Scheme of Assessment (formative and Summative)

Sr. No	**Professional Course**	**1st term (1-6 Months)**			**2nd Term (7-12 Months)**			**3rd Term (13-18 Months)**	
1	First Professional BHMS	1st PA	1ST TT		2nd PA	2ND TT		3rd PA	UE
		20 Marks Practical/Viva	100 Marks Theory	100 Marks Practical/ Viva	20 Marks Practical/Viva	100 Marks Theory	100 Marks Practical/ Viva	20 Marks Practical/Viva	

For Internal assessment, Only Practical/Viva marks will be considered. Theory marks will not be counted)

Method of Calculation of Internal Assessment Marks for Final University Examination:

PA1 Practical/Viva (20 Marks)	PA2 Practical/Viva (20 Marks)	PA3 Practical/Viva (20 Marks)	Periodical Assessment Average PA1+PA2+PA3/3	TT1 Practical/ Viva (100 Marks)	TT2 Practical/ Viva (100 Marks)	Terminal Test Average TT1+ TT2/ 200*20	Final Internal Assessment Marks
A	**B**	**C**	**D**	**E**	**F**	**G**	**D+G/2**

PA- Periodical Assessment **TT-** Terminal Test **UE**- University Examination

10.LIST OF RECOMMENDED BOOKS

THEORY

TEXT BOOKS

1. John N A (2023)Chatterjee C C. Text Book of Physiology 14th Edition. CBS Publication. (CBDC based)
2. Tortora G (2020). Principles of Anatomy & Physiology. Wiley Publication.
3. Jain A (2021). Text Book of Physiology Vol – 1 & 2. Avichal Publishing Company.
4. Reddy L P(2023)Fundamentals of Medical Physiology. CBS Publishers and Distributors(CBDC based)

REFERENCE BOOKS

1. Hall J. (2020). Guyton & Hall Text book of Medical Physiology. Elsevier Publication.
2. Khurana I (2021). Essential Medical Physiology. Elsevier Publication.

PRACTICAL & CLINICAL PHYSIOLOGY:-

1. Varshney VP, Bedi M, (2023) Ghai's Textbook of Practical Physiology: 10th Edition. Jaypee Brothers Medical Publisher (CBDC based)
2. John N Aet al (2021) C C Chatterjee's Manual of Practical Physiology: CBS Publishers and Distributors(CBDC based)
3. Jain A. (2019) Manual of Practical Physiology. 6th ed. Arya Publications.
4. Glynn M., William D. (2017). Hutchison's Clinical methods. 24th edition Elsevier Publication

11. LIST OF CONTRIBUTORS

Dr. Chirag Shah

Professor & HOD, Department of Human Physiology & Biochemistry

Smt. M. K. Sanghvi Homoeopathic Medical College, Miyagam-Karjan - 391240

Dr. Juhi Gupta

Assistant Professor,

Government Homoeopathic Medical College & Hospital, AYUSH Parisar, Bhopal 462003

Dr. Shishir Mathur

Professor & Vice Principal,

Dr. MPK Homoeopathic College, Hospital & Research Centre, Jaipur

Dr Ajay Chaudhary,

COMPETENCY BASED DYNAMIC CURRICULUM FOR

FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(Organon of Medicine and Homoeopathic philosophy and Fundamentals of Psychology)

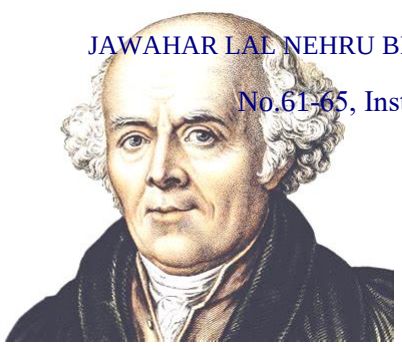
HOMOEOPATHY EDUCATION BOARD

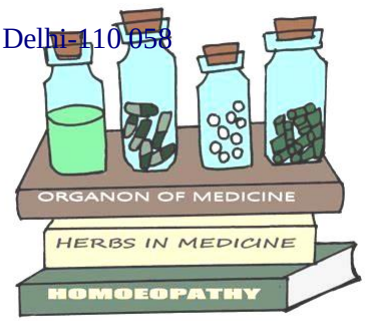
NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058





INDEX

Sr. No	Title	Page No.
1.	Preamble	2
2.	Course Code and Name of Course	3
3.	Course Outcomes (CO)	3
4.	Contents of CourseHomUG-OM-I (Course Contents, Teaching Hours)	37
5.	Table 2-Learning Objectives (Theory) of Course HomUG-OM-I	41
6.	Psychology	59
7.	Assessment	136
8.	References/ Resources	145
9.	List of Contributors	147

I PROFESSIONAL BHMS

Subject NAME: Organon of Medicine and Homoeopathic philosophy and Fundamentals of Psychology

Subject CODE: HomUG-OM-I

TEACHING HOURS:

1st BHMS **Organon of Medicine and Homoeopathic Philosophy, and Fundamentals of Psychology**		
YEAR	**TEACHING HOURS-**	
	LECTURES	**NON-LECTURE**
1ST BHMS	180	100

Preamble-

Organon of Medicine with Homoeopathic Philosophy is a central fulcrum around which education and training of a homoeopathic physician revolves. It lays down the foundations of homoeopathic practice, education, training and research. It not only elaborates on the fundamental laws but also how to apply them in practice. It defines the qualities of a healer, guides the homoeopathic physician in inculcating values and attitude and develop skills.

Nature nurtures us. It is well depicted in our science. Therefore, Homoeopathy is in sync with Nature. The need to keep life force within us well balanced with nature is well established in Organon. Hahnemann as an ecologist was well ahead of his time. Philosophically, it connects man and his actions to the dynamic forces available in nature, thus bringing to fore the holistic approach. Lateralization of these concepts helps the student to develop insight into various facets of Life & Living. Organon orients the students to homoeopathy as an Art & Science. Its comprehensive understanding needs a core competency in logic and the concepts of generalization and individualization. Its treatment of disease process and relating to the concept of Miasm makes it a study of the process of scientific investigation.

The biggest challenge in teaching-learning of Organon is to first understand the fundamentals according to the Master's writing and then demonstrate them in practice. Quality and real time integration with other subjects helps a student to conceive the holistic perceiving of Man and Materia Medica. The concepts and knowledge required by the Physician with operational knowledge of management of patients and their diseases will need horizontal and vertical integration with Homoeopathic subjects and clinical subjects.

First BHMS will need horizontal integration with Anatomy, Physiology, Homoeopathic Pharmacy and Homoeopathic Materia Medica. Organon will have spiral integration with itself and vertical integration with clinical subjects. Second year will need integration with pathology, community medicine, forensic medicine, along with other homoeopathic subjects. Third and fourth year establishes links with clinical subjects, research methodology and pharmacology.

Science is never static. Since the time of Hahnemann, medical science has advanced by leaps and bounds. Since Homoeopathy is based on principles rooted in nature, they would stand the test of time. However, their application in the changing times and circumstances would find newer avenues to heal. This is an opportunity for a homoeopath to connect the current advances while relating with the fundamental laws. Mastering all this will make him a master healer and will move him towards higher purpose of existence.

1. Course Code and Name of Course

Course Code	**Name of Course**
HomUG-OM-I	Organon of Medicine and Homoeopathic philosophy and Fundamentals of Psychology.

2.COURSE OUTCOMES (CO):

At the end of course in Organon of Medicine and Homoeopathic philosophy and Fundamentals of Psychology, the BHMS student shall be able to:

1. Explain the Cardinal Principles and Fundamental laws of Homoeopathy.
2. Describe the concept of Health, Disease and Cure in Homeopathy
3. Interpret a case according to the Hahnemannian Classification of Disease
4. Apply the Theory of Chronic Disease to determine the miasmatical background in a case.
5. Demonstrate case taking and show empathy with the patient and family during case taking
6. Demonstrate Analysis, evaluation of the case to form the Portrait of disease
7. Apply the concept of Susceptibility to determine posology in a given case
8. Interpret the action of the medicine in a case on the basis of Remedy reactions.
9. Apply knowledge of various therapeutic modalities, auxiliary measures & its integration with prevalent & other concepts in the management of patients.
10. Identify the various obstacles to cure and plan treatment accordingly.
11. Display qualities, duties & role**s** of a Physician as true practitioner of healing art
12. Develop the competencies essential for primary health care in clinical diagnosis and treatment of diseases through the judicious application of homoeopathic principles

13. Recognize the scope and limitation of homoeopathy and to apply the Homoeopathic Principles for curative, prophylactic, promotive, palliative, and rehabilitative primary health care for the benefit of the individual and community.
14. Discern the relevance of other systems of medical practice for rational use of cross referral and life saving measures, so as to address clinical emergences
15. Develop capacity for critical thinking and research aptitude as required for evidence based homoeopathic practice.
16. Demonstrate aptitude for lifelong learning and develop competencies as and when conditions of practice demand.
17. Be competent enough to practice homoeopathy as per the medical ethics and professionalism.
18. Develop the necessary communication skills to work as a team member in various healthcare setting and contribute towards the larger goals of national policies such as school health, community health, environmental conservation.
19. Identify socio-demographic, psychological, cultural, environmental & economic factors that affect health and disease and plan homoeopathic intervention to achieve the sustainable development Goal.

Specific Objectives of Organon of Medicine and Homoeopathic philosophy in1stBHMS

1. Recall the history of medicine and history of homoeopathy to relate its evolution
2. Correlate the first six aphorisms of Organon of Medicine for the study of anatomy, physiology, pharmacy.
3. Discuss the concept of health, indisposition and disease and its importance ~~in~~to the learning of anatomy, physiology, pharmacy and psychology
4. Discuss concept of Dynamization with health, disease and drug
5. Develop portrait of drug in the context of knowledge of anatomy, physiology, psychology and pharmacy
6. Explain the procedure and ethics of Drug proving

COURSE OUTCOMES (CO)of Organon of Medicine and Homoeopathic Philosophy for I BHMS

At the end of I BHMS, the student should be able to,

1. Summarize the important milestones in the History of Medicine and development of Homoeopathy.
2. Value the contributions and qualities of Dr. Hahnemann as a physician and person
3. Recall the contributions of stalwarts in development of Homoeopathy
4. Explain the Cardinal Principles and Fundamental laws of Homoeopathy
5. Explain the Homoeopathic concept of Health, Disease and Cure in light of modern concepts

6. Apply Inductive and Deductive Logic in the study of the Basic principles of Homoeopathy
7. Describe the important features of the various editions and Ground plan of Organon of Medicine
8. Explain the meaning and significance of aphorisms§1-27
9. Relate the concepts of homoeopathic philosophy with other pre-, para-, and clinical skills by way of horizontal, vertical and spiral integration.

3. Contents of Course HomUG-OM-I

Course Contents-

1. Introduction:

    1.1. History of medicine

    1.2. History of Homoeopathy

    Short history of Hahnemann's life, his contributions, and situation leading to discovery of Homoeopathy

    1.3. Brief history and contributions of Boenninghausen, Hering, Kent, R L Dutt, M L Sircar& B K Sarkar.

    1.4 History and Development of Homoeopathy in brief in India, U.S.A. and European countries

    1.5. Fundamental Principles of Homoeopathy.

    1.6. Basic concept: Individualistic, Holistic& Dynamic

    1.6.1. Life; Hahnemann's concept and modern concept.

    1.6.2. Health: Hahnemann's concept and modern concept.

    1.6.3. Disease: Hahnemann's concept and modern concept.

    1.6.4. Cure.

    1.7. Understanding Homoeopathy in vertical, horizontal & spiral integration with pre, para & clinical subject.

2. Logic: To understand Organon of medicine and homoeopathic philosophy, it is essential to be acquainted with the basics of LOGIC to grasp inductive and deductive reasoning. Preliminary lectures on inductive and deductive logic (with reference to philosophy book of Stuart Close Chapter 3 and 16).

3. § 1 to 27 of Organon of medicine, § 105 to 145

4. The physician – purpose of existence, qualities, duties and knowledge

5. Vital force- dynamization- homoeopathic cure- natures law of cure & its Implications- drug proving

1: Topics with reference list referring to Chapters from the text books				
Topic	Kent	Roberts	Close	Dhawale
Understanding the first six aphorisms and its application in the study of anatomy, physiology, pharmacy.	1-6	1	6	4
Concept of health, indisposition and disease and its importance in learning anatomy, physiology, pharmacy and psychology	1 to 9	2, 3, 4	6	2
Dynamization and relating with health, disease and drug	10, 11	2-6	14, 15	2, 16
Developing portrait of drug with help of knowledge of anatomy, physiology, psychology and pharmacy	13,21-25,26	15	15	16

Non lectures– community – OPD/IPD -

Students will be exposed to OPD/PD-community from first BHMS:

Students will understand the first six aphorisms in action and will get sensitized to socio-cultural-political-economical perspective of the community. They should develop insight into what constitutes health and how disease develops.

Introduce Journals from 1st year–

Habit of collecting evidence and noting them down vis-a-vis the expected objective will train them for evidence-based learning and inculcating the habit of using logic so inherent in Homoeopathic practice.

They also will realize the importance of skill and attitude and relevance of each subject in relation to Organon and Homoeopathic philosophy

They will write their experience of the clinic/OPD in relation to Observation/Cure/relief/Mission/Prevention/acute/chronic/indisposition etc.

(i) 5 medicines from HMM to correlate with Physiology-Anatomy-Pharmacy.

(ii) 5 cases observed in OPD

Teaching Learning Method

Assignments- Group work

Problem Based Learning through Cases- Literature

Group Discussion – Problem based learning

Project work with its presentations in class

Practicing Evaluation & Feedback system- after Project work, assignments & Group Discussions.

Teaching Hours-

1st BHMS Organon Classroom teaching and non-lecture hours		
YEAR	**TEACHING HOURS-** **LECTURES**	**Non-lecture**
1ST BHMS	130	78

Teaching Hours Theory

Sr. No.	List of Topics	Term	Lectures	Non-Lectures
1	History of medicine in brief History and Development of Homoeopathy In brief in India, U.S.A. & European Countries	I	5	5
2	Short history of Hahnemann's life, his contributions & situation leading to discovery of Homoeopathy	I	5	5
3	Brief History & Contributions of Boenninghausen, Hering, Kent, RL Dutt, ML Sircar & BK Sirkar	I	15	
4	Logic: To understand organon of medicine & homoeopathic philosophy, it is essential to be acquainted with the basics of LOGIC to grasp inductive & deductive reasoning. Preliminary lectures on inductive & deductive logic with reference to philosophy of Stuart Close.	I	5	5
5	Science & Art in Homoeopathy	I	5	
6	Different Editions & Constructions of Hahnemann's Organon of Medicine	I	10	5
7	Fundamental Principles of Homoeopathy	II	20	5
8	Basic concept of: Individualistic & Holistic Life: Hahnemann's concept & Modern Concept Health: Hahnemann's Concept & Modern Concept Disease: Hahnemann's Concept & Modern Concept Cure: Hahnemann's Concept & Modern Concept	II	5	5
9	§1-27&105-145 of Organon of medicine	II/III	60(20+40)	48
			130	78

4. Table 2-Learning Objectives (Theory) of Course HomUG-OM-I

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
TOPIC 1(1.1) – HISTORY OF MEDICINE											
Acquiring and Integration of Information	History of Medicine as it is evolved with important milestones	Knows	Explain History of Medicine with important milestones	Describe the evolution of Medicine	Cognitive	Level II Understand and interpret	Must Know	Lecture, small group discussion, Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Practise of medicine**
		Knows		Summarize important Milestones in Development and Evolution of Medicine	Cognitive	Level II Understand and interpret	Nice to Know	Lecture, small group discussion, Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Practise of medicine**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
		Knows		Describe the contribution of various Stalwarts in development of medicine	Cognitive	Level II Understand and interpret	Nice to Know	Lecture, small group discussion, Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Practice of medicine**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
TOPIC 1(1.2) – HISTORY OF HOMOEOPATHY											
Acquiring and Integration of Information	History of Homoeopathy as it is evolved with important milestones	Knows	Describe History of Homoeopathy	Describe History of Homoeopathy	Cognitive	Level II Understand and interpret	Must Know	Lecture small group discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica repertory**
				Describe the important milestones in the evolution of Homoeopathy	Cognitive	Level II Understand and interpret	Must Know	Lecture small group discussion Seminars Quiz	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica repertory**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
				Discuss the significance of important milestones in the evolution of Homoeopathy	Cognitive	Level II Understand and interpret	Must Know	Lecture small group discussion Seminars Quiz	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica repertory**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
TOPIC 1(1.2) – LIFE HISTORY OF DR. HAHNEMANN											
Acquiring and Integration of Information	Hahnemann's Life History	Knows	Describe Hahnemann's Life History	Explain in detail the Life history of Dr. Hahnemann with his contribution towards Homoeopathy	Cognitive	Level II Understand and interpret	Must Know	Lecture Small Group Discussions Presentation	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Materia Medica
				Discuss the contribution and qualities of Dr.Hahneman n as a physician and person	Affective	Level II Understand and interpret	Must Know	Lecture Small Group Discussions Presentation	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
TOPIC 1(1.3) – LIFE HISTORY OF STALWARTS OF HOMOEOPATHY											
Acquiring and Integration of Information	Stalwarts of Homoeopathy	Knows	Life History of Different Stalwarts In Homoeopathy	Describe Life History of Following stalwarts Dr. Kent, Dr. Boger, Dr.Boenninghausen. Dr, Hering, Dr. T.F. Allen, Dr. M.L. Sircar	Cognitive	Level II Understand and interpret	Desirable to know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Materia Medica Repertory
				Discuss the Contributions of stalwarts in development of Homoeopathy	Cognitive	Level II Understand and interpret	Desirable to know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Materia Medica Repertory

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
TOPIC 1(1.4) – HISTORY & DEVELOPMENT OF HOMOEOPATHY IN INDIA. USA & EUROPEON COUNTRIES											
Acquiring and Integration of Information	History & Development of Homoeopathy in India, USA & European Countries	Knows	History & Development of Homoeopathy in India, USA & European Countries	Explain the History & development of Homoeopathy in India, USA and European countries	Cognitive	Level II Understand and interpret	Desirable to know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Materia Medica
		Knows		Discuss the Contributions of stalwarts in development of Homoeopathy in India, USA and European countries	Cognitive	Level II Understand and interpret	Desirable to know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Materia Medica Repertory
TOPIC 1(1.5): Fundamental Principles of Homoeopathy											

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
Acquiring and Integration of Information	Fundamental Principles of Homoeopathy	Knows	Understanding the Fundamental Principles that govern Homoeopathy	Enumerate the cardinal principles of Homoeopathy	Cognitive	Level II Understand and interpret	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Materia Medica **Pharmacy**
		Knows		Explain the Cardinal Principles and Fundamental laws of Homoeopathy	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica Pharmacy**
		Knows		Describe the significance and	Cognitive	Understand (Level II)	Must know	Lecture	MCQ, SAQ,	MCQ, SAQ,	**Materia Medica**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
				importance of Cardinal Principles and Fundamental laws				Small Group Discussion Seminars	LAQ, Quiz	LAQ, Viva	**Pharmacy**
TOPIC 1(1.6): Concept of Health Disease and Cure as per Hahnemann's concept and correlation with modern concept.											
Acquiring and Integration of Information	Concept of Health Disease and Cure	Knows	Knowledge and application of concept of Health, Disease and Cure	Define the terms Health, disease and cure according to Dr. Hahnemann	Cognitive	Remember (Level I)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Anatomy physiology pharmacy Materia Medica**
		Knows		Define the terms Health, disease and cure	Cognitive	Remember (Level I)	Must know	Lecture Small Group Discussio	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Anatomy physiology pharmacy**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
				according to modern concept.				n Seminars			
		Knows		Explain Health, disease and cure according to Dr Hahnemann	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Anatomy, physiology, pharmacy**
		Knows		Differentiate the Hahnemannian concept of health, disease and cure from the modern concept	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica Anatomy Physiology Pharmacy**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
TOPIC 1(1.7): Different editions and Constructions of Organon of Medicine											
Acquiring and Integration of Information	Different editions and Constructions of Organon of Medicine	Knows	Significance of Different editions and Constructions of Organon of Medicine	Explain the history & development different editions and Constructions of Organon of Medicine	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica physiology and pharmacy**
		Knows		Differentiate between Different editions and Constructions of Organon of Medicine	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica Pharmacy**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
Topic 2: Logic											
Acquiring and Integration of Information	Logic in Homoeopathy	Knows	Utility and Correlating Logic to Homoeopathy	Explain 1. Inductive Logic 2.Deductive Logic	Cognitive	Level 2 Understand and interpret	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica Repertory**
		Knows		Differentiate between inductive and deductive logic using examples	Cognitive	Level 2 Understand and interpret	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	
		Knows		Apply the concept of Inductive and Deductive Logic to the	Cognitive	Level III Decision/problem solving	Must know	Lecture Small Group Discussio	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Repertory**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
				Fundamental Principles of Homoeopathy				n Seminars			
Topic3: Aphorisms 1-27 and 105-145											
Acquiring and Integration of Information	Aphorism	Knows	Understanding the meaning of Aphorisms	Explain the meaning and significance of Aph. 1-27	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Anatomy, Physiology Pharmacy Materia Medica**
				Explain Drug proving as per Aph 105-145	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion, seminar	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Integrated teaching with Homoeopathic Pharmacy

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
Topic 4 : Physician- Purpose of existence, qualities, duties and knowledge											
Acquiring and Integration of Information	Homoeopathic Physician	Knows	Qualities and Attributes of a Physician	Recognize the qualities, duties and knowledge expected from a physician	Affective	Receiving	Desirable to know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	
				Explain the Mission, qualities, duties & role of a Physician as true practitioner of healing art	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
Topic 5: Vital force- dynamisation- homoeopathic cure- natures law of cure & its Implications- drug proving											
Acquiring and Integration of Information	Concept of Vital Force and Drug Dynamization	Knows	Importance of Vital Force in health, disease and Cure and Drug Dynamization	Explain the roleof vital force in health, disease and cure	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica Pharmacy**
		Knows		Explain the concept of Homoeopathic Dynamization	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Materia Medica Pharmacy**
		Knows		Enumerate the methods of Homoeopathic	Cognitive	Remember (Level I)	Must know	Lecture Small Group Discussio	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	**Pharmacy**

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
				Dynamization				n Seminars			
		Knows		Explain the Nature's therapeutic law of cure	Cognitive	Understand (Level II)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	
		Knows		Apply Nature therapeutic law of cure to Homoeopathy	Cognitive	Understand (Level III)	Must know	Lecture Small Group Discussion Seminars	MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	

Generic Competency	Subject Area	Millers Level: Does/Shows how/ Knows how/ Knows	Specific Competency	SLO/ Outcome	Blooms Domain	Guilbert's Level	Must Know/ Desirable to know/ nice to know	T-L Methods	Formative Assessment	Summative Assessment	Integration Departments- Horizontal/ Vertical/ Spiral
		Knows		Explain Drug Proving					MCQ, SAQ, LAQ, Quiz	MCQ, SAQ, LAQ, Viva	Pharmacy

Table 3. Non-Lecture Activities

Sr. No	Non-Lecture Teaching Learning methods	Total Time Allotted per Activity (Hours)
1	Seminars/ Workshops	78 hours
2	Group Discussions	
3	Problem based learning	
4	Integrated Teaching	
5	Case Based Learning	
6	Self-Directed Learning	
7	Tutorials, Assignments, Projects	
	Total	**78 hours**

Psychology

Preamble

Mind is an invisible dynamic force operating on the body which can be seen and felt with its expressions at multiple levels. While understanding Man it is important to know how he behaves, feels and thinks in general of his life and in different situations.

Health is that balanced condition of the living organism in which the integral, harmonious performance of the vital functions tends to the preservation of the organism ensuring the normal development of the individual. In a similar way, study of mind is an inseparable component of the study of man and is essential for prescribing. Thus mind remains an integral component of Homoeopathic prescribing.

In § 5 of Organon of Medicine, Dr Hahnemann talked of basic knowledges required for Homoeopathic practice of Holistic cure. According to him homoeopathic physician has to have knowledge of :

a. Constitution of Man
b. His moral & intellectual character
c. Mode of living habits
d. His social & domestic relations
e. His adaptations with the environment

Above knowledge will help the Homoeopathic physician not only to understand the person in the patient but also to identify the cause of suffering by delving in to detailed enquiry. This may take the form of exploring evolutionary aspects from childhood to present, from family history – past history to present illness - all of which will indicate the qualities of the human in health as well as in disease.

Psychology is a science of mind and behaviour which is important and necessary in all areas of life including the growth and development of human being. Theoretically, psychology examines psychological phenomena and behavioural patterns that appear as individual's external behavioural reactions against any stimulus - be it Biological–Psychological– Emotional –Social-Spiritual.

Modern concept of psychology has talked of Mental Health and Hygiene which indicates the importance and great need for ensuring psychological wellbeing in us. This state is under constant stress due to the rapid changes taking place in the life situation due to internal pressures and external environment.

Index

Sr. No	Title	Page No.
1	Course Outcomes	61
2	Course Content	63
3	Teaching Methods	134
4	Number of Teaching Hours	135
5	Table.7- Assessment Summary	136
6	Number of papers and Mark Distribution	136
7	Scheme of Assessment (formative and Summative)	137
8	Calculation Method for Internal assessment Marks	138
9	Evaluation Methods for Periodical Assessment	138
10	Paper Layout	139
11	Distribution of Theory exam	140
12	Theme table	141
13	Question paper Blue print	142
14	Distribution of Practical Exam	144
15	Text Books and Reference books	145
16	List of Contributors	147

Course outcomes:

1. Explain the concept of Mind as perceived by Hahnemann and other stalwarts
2. Define the structure of the mind as conscious and unconscious and its various constituents / components in terms of Emotion, Thinking, Behaviour, Sleep and Dreams
3. Identify the conscious expressions of Mind as Emotion, Thought and Behaviour
4. Explain the neurophysiological basis of mental functioning
5. Discuss the relationship between the growth of the brain and the mind and its correlation with physical growth of the from infancy to old age and psychosocial development.
6. Evaluate the role that emotions and intellectual functions play in our daily lives
7. Derive the importance of the role of 'Learning' in human adaptation and change
8. Discuss 'Personality' as a synthesis of inborn traits and learnt responses occurring over the growing years
9. Realize the various forms of 'conflict', their origins and their role in determining the quality of our personal and social lives
10. Integrate the concept of mind as conceived in homoeopathic philosophy with that in modern psychology
11. Demonstrate the importance of the study of the Mind in approaching the study of Repertory and Materia Medica
12. Realize how a healthy individual experiences the harmonious functioning of the different constituents of the mind
13. Summarise the importance of knowledge of Psychology in Modern life and in Homoeopathic practice

General Instructions

1. Instructions in psychology should be planned in such a way that students should be able to present a basic understanding of the structure of mind, brain and its functioning with the kind of interrelationship they are sharing with each other.
2. Each topic should be planned in parallel with others subjects of Homeopathy where ever relevant to achieve integration with other subjects.
3. Since this subject is dealing with the human mind and its functions, topic should be dealt in more interactive ways where maximum learning will be achieved by doing rather than memorizing the things.
4. Emphasis would be more on the organization of the brain areas, their functions and correlated with the medical concept and philosophical concept of Mind.

5. Student should learn the psychological organization with learning the importance of special senses and their functions in great details that forms the foundation of the subject.
6. Most of the basic topics can be studied in interactive ways, discussion based on clinical case or any relevant event/ incidence of daily life.
7. Topics having philosophical connection should be taught with the help of discussion or in the form of story -telling with connections to the principles of philosophy.
8. Topics requiring a lot of analysis of information can be taught with role-play with directed observation method followed by discussion on the same pointing out its relevance and importance.
9. Nice to know topics along with a lot of community related information should be dealt with survey methods
10. Topics which are interrelated with other subjects of Homoeopathy should be presented and discussed.
11. Lectures or demonstration on the clinical and applied part of psychology should be arranged in the 3rd semester of the course and it should aim at demonstrating the structural-physiological –psychological basis of mental expressions of the symptoms and its value in Homeopathy.
12. Learning of applied psychology would be more qualitative in the various OPDs/Peripheral OPDs where contact with community will improve their knowledge, observation skills, attitude of communication with the community.
13. Some of the theoretical lectures should conclude with discussion on the learning achieved with its importance.
14. Periodical seminars on general topics related to philosophical aspect and its connection with psychology should be arranged for vertical, horizontal and spiral integration.
15. Role of observation and correlation should be demonstrated while discussing the intricacies of the subject of psychology.
16. Inter-departmental or joint seminars should be planned
17. While working on community survey- purpose should be kept very broad with the following objectives.
    (i) Experiencing the community in actuality for the demographic configuration, different cultural traditions, different practices and inter-relationship and its effect on Mind and Body as a joint system.
    (ii) Learning the functioning of human being in multiple situations of stress and process of getting adapted with those.
    (iii) Quality of Mental Health of the community and its varied expressions
    (iv) Quality of Inter-relationship within different castes, communities, religions and its impact on Individuals

Course contents:

Note: Each topic should be related with relevant clinical examples and the relationship with the subjects of Homoeopathic Philosophy, Materia Medica and Repertory must be made.

1. Introduction to the study of Mind in Homoeopathy
    A. Concept of Mind- i. Contemporary schools of psychology
    ii. Concept of Mind by Hahnemann
2. Psychological organization and the interrelationship of Thought (Cognition), Feelings (Affect) and Behaviour (Conation); Conscious and Unconscious elements
    A. Psychological Organisation i. Definition of Emotions and its types
    ii. Definition of Thinking and its types
    iii. Definition of Behaviour and its types
    B. Effects on Thought (Cognition), Feelings (Affect) and Behaviour (Conation) on Mind and Body
    C. Interrelationship of Thought (Cognition), Feelings (Affect) and Behaviour (Conation) on Mind and Body
    D. Representation of Thought (Cognition), Feelings (Affect) and Behaviour (Conation) in Materia Medica
    E. Representation of Thought (Cognition), Feelings (Affect) and Behaviour (Conation) in Repertory

3. Physiological and Evolutionary basis of behaviour -
    A. Instincts, Conditioned and unconditioned reflexes
    B. Conscious and unconscious behaviour
    C. Scientific study of Behaviour and its expressions
    D. Evolutionary study of behaviour
    E. Understanding Relationship of Behaviour to Emotions and Thought
    F. Expressions of Behaviour in Repertory and Materia Medica

4. Understanding Emotion, its different definitions and expressions in Repertory and Materia Medica
   A. Scientific study of Emotions i. Definition of Emotions and its types
      ii. Effects Emotions on Mind and Body
      iii. Effect of emotions on sexual behaviour
      iv. Interrelationship of Emotions on Mind and Body
   B. Representation of Emotions in Materia Medica-
   C. Representation of Emotions in Repertory

5. Understanding Intellect: Attention, memory and its function and expression in Repertory and Materia Medica
   Basic concepts of Thinking
   A. Definition of Thinking and its types
   B. Intelligence and its measurement
   C. Effects of Thinking /Thought (Cognition) on Mind and Body
   D. Representation of Thinking /Thought (Cognition) in Materia Medica
   E. Representation of Thinking /Thought in Repertory
6. Motivation and their types with role in our lives
   Study of Motivation and its types
   Importance of study of Motivation for Homoeopathic Physicians

7. Learning and its place in adaptation
   A. Study Learning:
      Definition of Learning and its types
      Study of relevance of Learning for Homoeopathic Physician
      Study of disturbances/ malfunctioning of Learning
   B. Adaption
      Definition and its dynamic nature
      Successful and unsuccessful adaptation

8. Growth and development of Mind and its expressions from Infancy to old age
   Study of Developmental Psychology
   i. Normal developments since birth to maturity (both physical and psychological)
   ii. Deviations- in Growth and Development and its effects on later behaviour
   iii. Understanding the bio-psycho-socio-cultural-economical-political-spiritual concept of evolution
   iv. Importance of above study to understand Materia Medica drug proving

9. Structure of Personality, the types, their assessment, relationship to Temperament and representation in Materia Medica
   i. Definition of Personality and its types
   ii. Various constituents of Personality like Traits and Temperament
   iii. Theories of Personality by psychologists
   iv. Measures for the assessment of Personality, relationship to Temperament and representation in Materia Medica

10. Conflicts: their genesis and effects on the mind and body
   i. Conflicts and their types
   ii. Genesis of Conflicts and effects on the mind and body
   iii. Genesis of Conflicts and related Materia Medica images

11. Applied Psychology: Clinical, Education, Sports, Business, Industrial
   Application of knowledge of Psychological Components and its Integration in understanding
   i. Psychological basis of Clinical Conditions
   ii. Education
   iii. Sports
   iv. Business

12. Psychology and Its importance in Homoeopathic Practice for Holistic management of the Patient.

Semester 1 Topic 1: 1. Introduction to Psychology with overview of different schools

Sr.No 1	Generic competency	Subject area	Millers Know/ Know how/ Show how/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assess ment	Summative Assessment	Integration - Horizontal / Vertical / Spiral
HomUG-OM-I.1.1	Information collection	What is Psychology	Knows	Discuss Psychology as a science	Define Psychology	Cognitive	Recall level I	Must know	Class room Lecture	MCQ	SAQ LAQ	
	Information collection		know		Discuss the psychology as a science	cognitive	understand level II	Desirable to know	Lecture	True /False sentences	Short Note	Concept of Logic-Inductive /Deductive Logic from Organon
	Information Analysis		Knows		Discuss the factors which make Psychology as a science	Cognitive	Understand Level II	Must know	Lecture	MCQ	SAQ Viva	
	Integration of information		Knows how		Explain the utility of the subject for a Homoeopath	Cognitive	Interpret Level II	Desirable to know	Lecture with discussion	MCQ	SAQ Viva	Horizontal integration with Organon

HomUG-OM-I.1.2	Information collection	Different schools of Psychology	Knows	Know the different schools of Psychology	Classify different schools of psychology based on their Concept and objectives and methods.	Cognitive	Understand Level II	Must know	Class room lecture	SAQ	SAQ Viva	Concept of Man/ Individualization from the Organon(useful as a preparation of concept for next topic)

Semester 1: Topic 2-Concept of Mind in Psychology and Homoeopathy

Sr.No 2	Generic competency	Subject area	Millers Know/ Know how/ Show how/Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ -ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.2.1	Information collection	Concept of Mind in Psychology and Homoeopathy	Knows	Describe the concept of Mind	Describe concept of Mind in differen	Cognitive	Understand and interpret Level II	Must know	Lecture/(use of 'Story telling')/ and Discussion on	MCQ	LAQ / SAQ	Organon -Concept of Mind as per Hahnemann/

					t schools of psychology				concept of Mind			Kent /BB/ Boger
Hom UG-OM-I.2.2	Information organization and synthesis		Knows	Relate concepts of Mind in psychology and homoeopathy	Discuss concept of Mind as in Organon	Cognitive	Integrate Level III	Must know	Small group discussion Charts / Models Audio-visual aids	Quiz True-false test items	LAQ/SAQ/ Viva	Horizontal Organon
	Analysis		Knows		Compare and contrast concept of mind in Organon with that in different schools	Cognitive	Understand and Level II	Nice to know	Lecture	MCQ	SAQ	

					of psychology							

Semester 1 –Topic- 3-Psychological organization of Mind and its interrelationship with Thought (Cognition), Feelings (Affect) and Behaviour (Conation)

Sr.No 3	Generic competency	Subject area	Millers Know/ Know how/ Showhow/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.3.1	Information synthesis	Organization of Mind and interrelationship of its constituent	Knows how	Identify the topography of the mind	Classify the divisions of the mind into conscious, unconsci	Cognitive	Understand Level II	Must know	Caselets and discussion	DOPS Full form to be written ?	LAQ / SAQ	

					ous and sub-conscious elements							
Hom UG-OM-I.3.2	Information collection		Knows how	Identify the constituents of the conscious mind	Distiguish the conscious mental expressions as Emotion, Thought and Behaviour	Cognitive	Interpret Level II	Must know	Caselets and Matching exercises	MCQ	LAQ, / SAQ/Viva	Integration with concept of Mental and Behavioral Expressions or symptoms from the Organon
Hom UG-OM-I.3.3	Information Interpretation Self reflection	Interrelationship of Emotions/ Thinking/	Knows how	Recognize the interrelationship of mental constituents and effects	Identify the relationship of mental expressions in terms of	Affective	Receive Level I	Must	Audio-visual media	Caselets with check list	SAQ	Horizontal integration Organon

		Behaviour and Mind and Body		of Mind and Body	Emotion, Thinking and Behaviour on Mind and Body							

HomUG-OM-I.3.4	Information Demonstration	Demonstration of abilities of observation	Shows How	Observethe mental expressions in terms of Emotion, Thinking and Behaviour	Identify the evidences of psychological expressions of Emotion, Thinking and Behaviour	Affective	Receive Level I	Must know	Audio-visual means in Small groups	Film viewing	Viva	
	Analysis and intergation	Demonstration of abilities of integration	Knows how	Distinguish the expressions into Emotion, Thinking and Behaviour	Align the observations conducted above with the knowledge about emotions, thoughts and behaviour	Cognitive	Understand Level II	Must know	Process the observations	Check list on the film shown	MCQ	
HomUG-OM-I.3.5	Analytical	Application of knowledge in practice	Shows how	Identify the mental expressions in Repertory	Demonstrate the rubrics from the given case scenarios	Psychomotor	Imitate Level I	Must know	Case-based learning Teaching with Repertory	Assignments	SAQ	Hor learning with Repertory

Semester 1 Topic 4 Physiological basis of Emotions, Thought and Behaviour

Sr.No. 4	Generic competency	Subject area	Millers Know/ Knowhow/ Show how/ Does	Specific competency	Specific Learning Objectives / outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.4.1	information Collection	Physiological basis of the mind	Knows	Understanding the parts of the brain important in understanding mental functions	List the parts of the Brain relevant to understanding the mental functioning	Cognitive	Recall Level I	Must know	Lecture with a demonstration with model of brain	MCQ	SAQ	Anatomy - Brain structures can be dealt simultaneously
Hom UG-OM-I.4.2	information collection		Knows		Explain the different parts of the brain	Cognitive	Understand and interpret Level II	Must know	Demonstration of brain model	MCQ	SAQ	

					which are the seat of the emotions of aggression, love, anger and anxiety				with discussion			
Hom UG-OM-I.4.3			Knows		Explain the different parts of the Brain which are the seat of intellectual functions of attention, memory and executive functions	Cognitive	Understand and interpret Level II	Must know	Demonstration of brain model with a discussion	MCQ	SAQ	

Hom UG-OM-I.4.4			Knows		Explain the different parts of the Brain which are responsible for simple behaviour	Cognition	Understand and interpret Level II	Desirable to know	Group discussion	MCQ	SAQ	
Hom UG-OM-I.4.5	Information Interpretation and Synthesis		Knows how	Discuss the genesis of Emotions, Thinking, Behaviour	Integrate the manner in which the emotions, intellectual and behavioural function are coordinated	Cognitive	Problem solving Level III	Must know	Lecture with PPT	MCQ	SAQ	Integration with Psycho-physiology

Semester 1: Topic 5: Understanding behaviour, its origins and its representation in repertory and Materia medica

Sr. No	Generic Competency	Subject area	Millers Know/ Know how/ Show how/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
	Information	Behaviour and Functioning and the origins	Knows	Instincts and reflexes and their importance	Define instinct and reflex	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	Physiology
	Information		Knows		Enumerate the instincts seen across the animal species	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	
	Information		Knows		Enumerate the reflexes	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	

					seen in the new born							
	Information Analysis		Knows		Discuss the role and limitations of these ensuring in our survival	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	
	Information		Knows		Define Conditioned and Unconditioned reflex	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	
	Information		Know	Define Behavior and Functioning	Define Behaviour as externally observed expressions	Cognitive	Recall Level I	Must know	Lecture and AV methods	MCQ	MCQ	Organon + Repertory – Concept of symptomatology- Physical symptoms
	Information Analysis		Knows		Differentiate behaviour as being of conscious	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	

	Self awareness				and unconscious							
	Information collection		Know		Define functioning as expressions of the system which needs special instruments to measure	Cognitive	Recall Level I	Must know	Lecture and Demonstration	MCQ	MCQ	
	Information Analysis		Know how		Elaborate on the difference between Behaviour and Functioning	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	
	Information		Knows		Discuss the scientific methods	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	

	System thinking				of studying behaviour							
	Information		Knows	Origins and function of Behaviour	Draw a list of species specific behaviours in birds, fish and primates	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	
	Information Analysis		Knows		Discuss the function of these specific behaviours	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ Viva	
	Information	Control of Behaviour	Knows	Factors influencing behaviour	Discuss the factors which regulate any two of the species specific behaviours listed above	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ Viva	
	Information		Knows		Differentiate innate and	Cognitive	Understand and	Must know	Lecture	LAQ	LAQ	

	Synthesis				learned behaviour as originating from unconditioned and conditioned reflexes		interpret Level II					
	Analytical		Knows		Discuss how emotions are the determinants of behaviour and functioning	Cognitive	Understand and interpret Level I	Must know	Lecture	SAQ	SAQ Viva	
	Analytical		Knows		Discuss how thoughts are is the determinant of behaviour and	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ Viva	

					functioning							
	Information Analysis	BehaviourBehaviourand Homoeopathy	Knows	Representation of Behaviour in the repertory	Illustrate the place of behaviour in repertory	Cognitive	Understand and interpret Level II	Must know	Demonstration	Checklist	MCQ / Viva	Repertory
	Information Synthesis		Knows	Representation of behaviour in Materia Medica	Illustrate the representation of behaviour in Materia Medica	Cognitive	Understand and interpret Level II	Must know	Demonstration	Checklist	MCQ / Viva	Materia Medica

Semester 2 Topic 1-Understanding emotions and their representation in the repertory and Homoeopathic Materia Medica(HMM)

Sr. No	Generic Competency	Subject area	Millers Know/ Know	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral

			how / Show how / Does									
	Information	Understanding emotions, the types and their origins	Knows	Define emotions and differentiate from feeling and mood	Define emotions, mood and feelings	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	
	Analysis		Knows how		Differentiate the above three from each other	Cognitive	Understand and interpret Level II	Must know	Lecture	Caselets	SAQ/Viva	
	Observation Empathy		Shows	Recognition of facial expressions	Recognize different emotions exhibited on the screens	Affective	Receive Level I	Must know	Images of facial expressions	Spotters	MCQ	

	System thinking		Know		Discuss the different ways that emotional expression is perceived by us	Cognitive	Understand and interpret Level II	Must know	Lecture	MCQ	MCQ	
	Information		Knows	Classification of emotions	Discuss the classification of emotions Primary and Secondary; Positive and negative	Cognitive	Understand and interpret Level II	Nice to know	Lecture	MCQ	MCQ	
	Analysis		Knows		Discuss the implications and limitation of the above	Cognitive	Understand and interpret Level II	Nice to know	Lecture	SAQ	SAQ/Viva	Integration with Kent's concept of hierarchy

					classification							of mental symptoms
	Information collection		Knows	Understand theories of emotions and their significance	Describe the prominent theories of emotions James Lange Cannon-Bard Schaster-Singer Cognitive Mediational theory	Cognitive	Understand and interpret Level II	Nice to know	Lecture with cassettes	SAQ	SAQ/Viva	Integration with signs and symptoms from HMM of few prominent remedies studied simultaneously
	Information collection		Knows		The Bhava-Rasa theory of emotions	Cognitive	Recall level-I	Nice to know	Lecture with multimedia-e.g. video films or images demonstrating the	SAQ	SAQ	Integration with the concept of channelization and its importance in the healing

									theory of Bhav-Rasa			process or cure from the 1st aphorism of Organonon
	Information Analysis		Knows		Differentiate the five theories from each other	Cognitive	Understand and interpret Level II	Nice to know	Lecture	LAQ Essay writing/Model preparation on on each theory (can be considered as a project for practical)	LAQ	
	Information Synthesis Problem solving		Knows		Evaluate the implications of each of the theories in understan	Cognitive	Problem solving level -III	Nice to know	Discussion with examples	LAQ	LAQ	

					ding emotions							
	Information collection	Biological view of emotions	Knows	Biological basis of emotions	Enumerate the constituents of the limbic system important in the understanding of emotions	Cognitive	Recall Level	Must know	Lecture with model	MCQ	MCQ/ Viva	Anatomy + Physiology
	Information Analysis and Synthesis		Knows		Discuss the role of the different constituents of the limbic system in expression and regulation of emotions	Cognitive	Understand and interpret Level II	Must know	Discussion with models	LAQ	LAQ	

	Information Analysis		Knows		Discuss the effects of hormones in influencing emotions	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	Physiology
	Information Synthetic		Knows	Sex and emotions	Define sexual activity in terms of emotional arousal	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information Synthesis		Knows		Describe the participation of brain systems in sexual behaviour	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information interpretation		Knows		Discuss the effect of early influences on sexual behaviour	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	

	Information Synthesis		Knows		Discuss the effects of socio-cultural surroundings on sexual behaviour	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	
	Information collection		Knows		Enumerate the varieties of sexual orientation seen	Cognitive	Recall Level -I	Must know	Lecture	MCQ	MCQ	
	Information		Knows		Identify gender identity and sexual identity	Cognitive	Recall Level -1	Must know	Lecture	MCQ	MCQ/ Viva	
	Self awareness		Knows		Recognize the challenges faced by differently sexually oriented persons in society	Affective	Receive Level-II	Must know	Visual clips of cases Role play	SAQ	SAQ/Viva	

	Information collection	~~Wholistic~~ Holistic approach to Emotional health	Knows	Emotions and their effects on the self and others	List the effects of emotions on the human system in terms of cognitive, behavioural and physical system	Cognitive	Recall Level-I	Must know	Lecture	MCQ	MCQ/ Viva	
	Systems thinking		Knows		Discuss the pathways through which emotions affect cognition, behaviour and physical system	Cognitive	Understand and interpret Level II	Must know	Lecture with demonstrative examples	LAQ	LAQ	
	Information collection		Knows	Positive emotions and their	Define happiness, joy and peace	Cognitive	Recall Level I	Must know	Lecture with demonstr	SAQ Essay	SAQ/ Viva	

				effect on health					ative examples			
	Information Analysis		Know		Describe the brain mechanisms responsible for states of happiness, joy and peace	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ	Anatomy
	Information Synthesis		Know		Discuss the effects of states of happiness, joy and peace on human systems	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	Physiology
	Holistic approach Self awareness		Knows		Explore the different mechanisms for maintaining a state	Affective	Receive Leve-I	Must know	Lecture with demonstrative examples	LAQ	LAQ	Integration with concept of harmoniums way life or balance

					of joy and peace							life from Organon
	Information collection		Knows	Influence of Cultural on expressions of emotions	Enumerate the effects of different cultures on emotional expression	Cognitive	Recall level-I	Nice to know	Lecture	MCQ Project on collection of information from different culture and their concept of emotions and its expressions	MCQ/ Viva	
	~~Holsitic~~ Holistic approach		Knows		Discuss the implications of cultures affecting emotional expression	Cognitive	Understand and interpret Level II	Nice to know	Lecture/ Films	SAQ above exercise will be useful here as well	SAQ/Viva	

	Information Analysis	Emotions and Homoeopathy	Knows	Representation of Emotions in the repertory	Illustrate the place of emotions in repertory	Cognitive	Understand and interpret Level II	Must know	Demonstration	DOPS	MCQ	Repertory
	Information Synthesis		Knows	Representation of emotions in Materia Medica	Illustrate the representation of emotions in Materia Medica	Cognitive	Understand and interpret Level II	Must know	Demonstration	DOPS	MCQ	Materia Medica

Semester 2 Topic 2-Understanding intellect and its representation in repertory and materia medica – Part-I Attention, concentration and memory

Sr. No	Generic Competency	Subject area	Millers Know/ Knowhow/ Showhow/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
	Information collection	Introduction to attention and concentration the underlying psycho-physiological mechanisms, regulation and	Knows	Definition of terms with psycho-physiological mechanisms	Define attention and concentration	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ/ Viva	
	Information interpretation		Knows		Enumerate the brain regions which are involved in these functions	Cognitive	Recall Level I	Must know	Lecture with model	MCQ	MCQ/ Viva	Anatomy

	Information synthesis	applied aspects	Knows		Discuss the neural processes which are responsible for regulating attention and concentration	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	Physiology
	Information Interpretation		Knows	Control over attention and concentration	Discuss the factors which affect attention and concentration	Cognitive	Understand and interpret Level II	Must know	Lecture	MCQ	MCQ/ Viva	
	Information Interpretation and synthesis		Knows		Realize the above processes in our daily life	Affective	Receive Level-I	Must know	Demonstration	- ? ? survey on attention span with the	-	

										help of multimedia or any activity		
	Information collection		Knows		Discuss the different physical and psychological methods used for regulating attention and concentration	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information Interpretation	Applied aspects of attention	Knows	Application of attention and concentration	Discuss the effects of disturbed attention in childhood and adult life	Cognitive	Understand and interpret Level II	Must know	Lecture Video	SAQ	SAQ/Viva	Spiral integration with anatomy and physiology

	Information Interpretation		Knows	Representation of attention and concentration in the repertory	Identify the rubrics representing attention and concentration in the repertory	Cognitive	Understand and interpret Level II	Must know	Demonstration	DOPS	MCQ	use of all the 3 repertories
	Information Interpretation		Knows	Reflection of attention in Materia Medica	Identify the reflection of attention and concentration in remedies	Cognitive	Understand and interpret Level II	Must know	Demonstration	SAQ	SAQ/Viva	Sources of HMM
	Information collection	Memory types, processes and applied aspects	Knows	Types of Memory and processes	Enumerate the types of memory	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ	
	Information Interpretation		Knows		Discuss the models of memory	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ Project on models	SAQ/Viva	Integration with anatomy and

					Information-processing And neural network					of Memory		physiology
	Information Analysis		Know		Discuss the function of the types of memory in our daily lives	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ Activity on memory games and its importance in day to day to life	LAQ	
	Information collection		Know	Factors affecting memory and their regulation	Enumerate the factors which affect different types of memories	Cognitive	Recall Level I	Must know	Lecture	MCQ	MCQ/ Viva	

	Information Interpretation		Know how		Discuss different ways of assessing different types of memory	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ Activity based on memory games (connection can be linked to concept of MSE/MMSE)	SAQ/Viva	
	Information Collection and Interpretation	Forgetting, its mechanisms and implications	Know	Forgetting, the types and the implications	Discuss the reasons for forgetting	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/Viva	
	Information Synthesis		Know how		Discuss ways of enhancing recall	Cognitive	Understand and interpret Level II	Must know	Lecture Demonstration with examples	SAQ Memory games with concept of	SAQ/ Viva	

										mnemonics		
	Information collection		Knows		Describe the state of memory with senescence	Cognitive	Recall Level I	Must know	Lecture	SAQ	SAQ/Viva	
	Information Analysis and Interpretation		Knows		Discuss the implications of loss of memory with advancing age	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ survey on state of memory function with advancing age (a small article can be published with the help of survey findings)	SAQ/Viva	Integration with anatomy and physiology

	Information Interpretation	Applied aspects of Memory	Knows	Memory changes	Describe ways in which memory can get distorted	Cognitive	Understand and interpret Level II	Nice to know	Lecture	-	-	
	Information Analysis and Interpretation		Knows		Discuss ways of reconstructing a lost memory	Cognitive	Understand and interpret Level II	Nice to know	Lecture	-	-	
	Information Interpretation		Knows		Discuss the implications of the dangers of reconstruction of memory in our everyday life	Cognitive	Understand and interpret Level II	Nice to know	Lecture	-	-	
	Information	Homoeopathic	Knows	Representation of sharp and loss of	Identify the rubrics representi	psychomotor	Understand and	Must know	Demonstration	DOPS	MCQ	

	collection , Interpretation	aspects of memory		memory in the repertory	ng memory issues in the repertory		interpret Level I					
	Information collection and Interpretation		Knows	Reflection of memory issues in Materia Medica	Identify the reflection of memory in remedies	Cognitive	Understand and interpret Level I	Must know	Demonstration	SAQ	SAQ/Viva	

Semester 2 Topic 3-Understanding intellect and its representation in repertory and materia medica –Part-**II Perception and Intelligence**

Sr.No	Generic Competency	Subject area	Millers Know/ Know how / Show	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral

			how / Does									
Hom UG-OM-2.2.1	Information collection	Discuss Perceptual organization	knows	Describe Perception and differentiate from sensations and thinking	Define Perception.	Cognition	Recall level I	Must know	Small group discussion	MCQ	MCQ	Horizontal Anatomy and Physiology
	Information organization and Interpretation				Relate perception to sensory processes and differentiate from thinking	Cognition	Understand and interpret Level II	Must know	Visual films	SAQ	SAQ	
Hom UG-OM-2.2.2	Information Synthesis		know	Genesis of perception and importance of ground ---	Describe the Psychophysiology of perception	Cognition	Understand and interpret Level II	Must know	Small group discussion	MCQ	MCQ	

Hom UG-OM-2.2.3	Information interpretation		Knows how	Dynamics of perception and perceptual errors	Describe the role of attention and state of the mind, depth, constancy, movement in Perception	Cognitive	Understand and interpret Level II	Must know	Small group activities	Observation Examples or Activity indicating the role of in attention in perception	MCQ/ Viva	
Hom UG-OM-2.2.4	Information synthesis		Know		Explain the physiological and psychological basis for Perceptual errors.	Cognitive	Understand and interpret Level II	Desirable to know	Films and images	Project	MCQ/ Viva	
Hom UG-OM-2.2.5	Information synthesis		Know	Social perception and its impact on our lives	Discuss determinants of social perception	Cognitive	Understand and interpret Level II	Must know	Class room lecture	MCQ + Survey on this topic demonstrating the	LAQ/SAQ	

										impact of social factors		
	Self reflection		Know		Realize the effect of perception on interpersonal and community relationships	Affective	Receive Level I	Must know	Media and discussion + Role Play followed by directed discussion	SAQ	SAQ/ Viva	Integration with the concept of disposition –Mental specifically / individualization
Hom UG-OM-2.2.6	Holistic approach		Knows	Gestalt perception and its importance to Homoeopathy	Observe gestalt perception	psycho motor	Observe/ imitate Level II	Must know	Small group activity + Role Play followed by directed	Presentation performance	MCQ	

									discussion			
					Illustrate its importance to Homoeopathy in case taking	Cognitive	Understand and interpret Level II	Desirable to know	Visual films Demonstration in OPD/videos		LAQ	Horizontal/ Vertical with Organon
HOM UG OM 2.2.7	information Synthesis		Knows	Applied aspects of Perception	Understand the perceptual difficulties of Dyslexia Know the phenomena of hallucination	Cognitive	Understand and interpret Level II	Must know	Caselets and visual graphics		SAQ/ Viva	Vertical integration Psychiatry
HOM UG OM 2.2.8	Information management		Shows how	Perception in Repertory and Materia Medica	Derives rubrics and remedies related to perceptual	Cognitive	Understand Level II	Must know	Demonstrate	DOPS	SAQ / Viva	Horizontal integration Repertory and HMM

					phenomena							
	Information collection	Intelligence and its measurement	Knows	Conceptual models of Intelligence	Define Intelligence	Cognitive	Recall level I	Must know	Lecture	MCQ	MCQ/ Viva	
	Information Analysis and information Interpretation		Knows		Detail the different approaches to viewing Intelligence i. Multiple intelligences (Gardner) ii. Triarchic theory (Sternberg) iii. Fluid and Crystallized (Catell's)	Cognitive	Understand and interpret Level II	Nice to know	Lecture	SAQ	SAQ/ Viva	

					iv. PASS theory							
	Information collection		Knows	Measurement of Intelligence	Define Intelligence Quotient (IQ)	Cognitive	Recall level I	Must know	Lecture	SAQ	SAQ/ Viva	
	Information Analysis and interpretation		Knows		Discuss the contribution of heredity and environment to intelligence	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/ Viva	
	Informaiton Analysis		Knows		Discuss the pros and cons of measurement of IQ	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ/ Viva	
	Information		Knows		Enumerate the methods of assessing intelligence	Cognitive	Recall level I	Nice to Know	Lecture	MCQ	MCQ/ Viva	

	Information collection	Intelligence as a force	Knows	Emotional intelligence and its uses	Define emotional intelligence	Cognitive	Recall level I	Must know	Lecture	MCQ	MCQ/ Viva	
	Information collection		Knows		Define the components of Emotional intelligence	Cognitive	Recall level I	Must know	Lecture	MCQ	SAQ/ Viva	
	System thinking and self awareness		Knows		Discuss the ways in which Emotional intelligence is useful to individuals and groups	Cognitive	Understand and interpret Level II	Must know	Lecture and discussion	LAQ Activity indicating the usefulness of Emotional Intelligence in day to day activity / functioning	LAQ	
	Information		Knows		Define creativity	Cognitive	Recall level I	Must know	Lecture	SAQ	SAQ/ Viva	

	collection			Creativity and its growth								
	Information Systems thinking		Knows		Illustrate the process of creativity	Cognitive	Understand and interpret Level II	Must know	Lecture	Project or activity on any theme indicating the creativity		
	Systems thinking		Knows		Discuss the ways in which creativity can be fostered	Cognitive	Understand	Must know	Lecture	SAQ	SAQ/ Viva	
	Information collection	Applied aspects of Intelligence	Knows	Extremes of intelligence	List the types of extreme intelligence on the Bell-shaped curve	Cognitive	Recall level I	Must know	Lecture	SAQ	SAQ/ Viva	
	Information Analysis		Knows		Discuss the special needs of the persons occupying	Cognitive	Understand and interpr	Nice to know	Lecture	SAQ	SAQ/ Viva	

					the extremes of intelligence		et Level II					
	Information Analysis	Intelligence and Homoeopathy	Knows	Representation of Intelligence in the repertory	Illustrate the place of Intelligence in repertory	Cognitive	Understand and interpret Level II	Must know	Demonstration	DOPS	MCQ	Repertory
	Information Synthesis		Knows ? Shows	Representation of intelligence in Materia Medica	Illustrate the representation of intelligence in Materia Medica	Cognitive	Understand and interpret Level II	Must know	Demonstration	DOPS	SAQ/ Viva	Materia Medica

Semester 2 Topic 4-Motivation, its types and its relevance for Homoeopath

Sr.No 10	Generic Competency	Subject area	Millers Know/ Know how/ Show how/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-2.10.1	Information collection	Motivation, the types and its role in daily living	Knows	Describe motivation	Define motivation	Cognitive	Recall level I	Must know	Class room lecture	MCQ	LAQ/SAQ	
Hom UG-OM-2.10.2	Information collection		Knows	Understand the nature and types of motivation	Enumerate the types of motivation	Cognitive	Recall level I	Must know	Class room lecture	MCQ	LAQ/SAQ	
Hom UG OM	Self reflection		Knows how		Recognize the types of motivation influencing our	Affective	Receive level I	Must know	Audio-visual Discussion	SAQ	SAQ/Viva	

2.10.3					thinking and emotions							
Hom UG-OM-2.10.4	Information Interpretation	Use of Maslow's model of motivation in our personal and professional lives	Knows	Models of Motivation	Describe the Maslow's self-actualization model	Cognitive	Understand and interpret Level II	Must know	Small group discussion	Assignment	LAQ	
HOM UG OM 2.10.5	Self reflection and awareness		Knows how		Recognize the importance of the model in knowing human beings	Affective	Receive level I	Must know	Group discussion with caselets	Checklist	SAQ/Viva	
UG HOM 2.10.6	Information Synthesis	Utility of Motivation for a Homoeopath	Shows how	Reflection of motivation in Repertory and HMM	Derives rubrics and remedy images related to motivation	Cognitive	Understand and interpret Level II	Must know	Demonstrate	Checklist	MCQ	

Semester 2 Topic 5-Learning, its types and its relevance in daily functioning of Humans

Sr.No 8	Generic Competency	Subject area	Millers Know / Know how/ Show how/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ -ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.6.1	Information collection	Learning and adaptation	Knows	Define learning and its role in bringing about adaptation to change	Define learning and adaptation	Cognitive	Recall level I	Must know	Class room lecture	MCQ	LAQ / SAQ	
	Information Synthesis				Derive the relationship between the two	Cognitive	Understand and interpret Level II	Must know	Caselets	Caselets	Problem	
Hom UG-OM-I.6.2	Information collection	Learning forms and their	Knows	Forms of learning	Explain the three forms of learning viz. Classical conditioning,	Cognitive	Understand and interpret Level II	Must know	Class room lecture	Checklist	LAQ/SAQ	

		implication for us			Instrumental conditioning and observational learning							
Hom UG-OM-I.6.3	Holistic thinking		Does	Differentiate the forms or types of learning and their significance	Explain the significance of the above three forms in our daily lives	Cognitive	Understand and interpret Level II	Must to know	Demonstration	Project	MCQ	
	Information collection		Know	Determinants of learning and their significance	Enumerate the various factors which determine the quality of learning	Cognitive	Recall level I	Must know	Lecture	MCQ	MCQ	
	Problem solving		Know how		Derive the ways in which these factors can be used for enhancing learning	Cognitive	Problem solving level II	Must know	Assignments	Caselets	SAQ / Viva	
	Analytical		Knows		Identify the factors which would inhibit learning and	Cognitive	Understand and interpret Level II	Must know	Assignment	SAQ	SAQ/Viva	

					which would need to be attended to							
	Information collection	Assessment of learning	Knows	Know the methods of assessing learning	List the methods whereby learning is assessed	Cognitive	Recall level I	Must know	Lecture	MCQ	MCQ/Viva	
	Analytical				Evaluate the respective value of the different methods to assess learning	Cognitive	Problem solving level III	Must know	Assignment	SAQ	SAQ/Viva	
	Information Synthesis	Utility of Learning and adaptation for a Homoeopath	Shows how	Reflection of learning and adaptation in Repertory and HMM	Derives rubrics and remedy images related to learning and adaptation	Cognitive	Understand and interpret Level II	Must know	Demonstrate	DOPS	MCQ	

Semester 3 Topic 1-Evolution of Mind with Growth and Development: Normal developments since birth to maturity: physical and psychological

Sr.No	Generic Competency	Subject area	Millers Know/ Know how/Show how/Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
	Information collection and analysis	Concept and process of Human Develop m	Knows	Discuss areas of human Growth and Development	Define and distinguish between Growth and Development	Cognitive	Interpret	Must know	Lecture	SAQ	SAQ/Viva	
Hom UG-OM-I.4.1	Information collection		Knows		List the three domains of development Physical, Cognitive and psychosocial development	Cognitive	Remember- level I	Must know	Class room Lecture	MCQ	LAQ / SAQ	
Hom UG-	Information		Knows		Distinguish the	Cognitive	Understand and	Must	Small group	Quiz	LAQ/SAQ	

OM-I.4.2	Analysis ~~Analytical~~		how		characteristics of physical, cognitive and psychosocial development		interpret Level II	know	discussion Charts / Models Audio-visual aids	True-false test items		
	Information analysis Analyitcal		Knows how	Discuss determinants of development	Distinguish between the contribution of nature and nurture in development	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	information collection and Interpretation		Knows		Define the concept of developmental milestones in childhood	Cognitive	Recall	Must know	Lecture	MCQ	MCQ	
Hom UG-OM-I.4.3	Information Organization ~~Analytical~~	Developmental stages of Psychosexual, cognitive and psychoso	Knows how	Discuss the theories of cognitive and psychosocial	Discuss the theory of psychosexual development as proposed by Freud	Cognitive	Understand and interpret Level II	Must know	Small group demonstration, peer group activities.	MCQ	MCQ	Horizontal integration with Anatomy, physiology

	Information Analytical	cial development	Knows how	development	Discuss the theory of cognitive development proposed by Piaget	Cognitive	Understand and interpret Level II	Must know	Lecture with examples	LAQ	LAQ	
	Information Analytical		Knows how		Discuss the theory of psychosocial development of Erik Erikson	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information collection and Interpretation and Analysis	Human Development across the Life span	Knows how	Discuss the development of the human being across the lifespan	Discuss the different stages of physical, emotional and cognitive development of childhood	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information collection		Knows		Discuss parental styles appropriate to help optimal growth in childhood	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ Essay on most suitable parent	LAQ	

	Self reflection									ing style		
	Information collection and Interpretation ~~Analysis~~		Knows how		Discuss the different stages of physical, psychosocial and cognitive development of adolescence	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information Self reflection		Knows how / Show how		Discuss the role of home, school and society on the development of the adolescent	Cognitive ?Affective	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information Analysis		Knows how		Discuss the different stages of physical, psychosocial	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	

					and cognitive development of adulthood							
	Information Analysis		Knows how		Discuss the different stages of physical, psychosocial and cognitive development of old age and senescence	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Information Self reflection and awareness	Significance of knowledge of Growth and Development for a homoeopath	Knows how	Discuss significance of growth and development in homoeopathy	Recognize the impact on knowledge of Growth and Development in case taking	Affective	Receive level I	Must know	Lecture	LAQ	LAQ	Hor. with Organon
	Information Analysis		Knows		Identify the significance of knowledge of Growth and Developmen	Psycho motor	Imitation level I	Must know	Lecture	LAQ	LAQ	Hor. with Repertory

					t in use of Repertory							
	Information organization ~~Analysis~~		Knows		Locate the significance of knowledge of Growth and Development in Homoeopathic Materia Medica	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	Hor. with HMM

Semester 3 Topic 2- Development of Personality, types, Traits, Temperament

Sr.No	Generic Competency	Subject area	Millers Know/ Know how/Show how/Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
HomUG-OM-I.9.1	Information collection	Concept of Personality. Temperament and trait	Knows	Discuss the concept of personality	Define the concept of personality	Cognitive	Recall level I	Must know	Lecture with discussion	MCQ	SAQ/Viva	Concept to be discuss with Organon
	Information collection, information interpretation and		Knows	Discuss the concept of Temperament and its evolution	Discuss the concept of temperament and its relation to Body type	Cognitive	Understand and interpret Level II	Must know	Lecture	SAQ	SAQ	

	Synthesis											
Hom UG-OM-I.9.4	Information collection + Information Interpretation		Knows	Discuss the concept of traits and its utility	Describe the scientific concept of 'Traits' and their importance	Cognitive	Understand and interpret Level II	Must know	Lecture with case let discussion	MCQ	SAQ/Viva	Concept to be discuss with Organon
Hom UG-OM-I.9.5	Information collection interpretation and Analysis Synthesis	Theories of Personality and developmental process	Knows	Discuss the Theories of Personality	Explain the following theories of personality 1. Biological 2. Behaviouristic 3. Learning 4. Humanistic proposed by various psychologists and their implication	Cognitive	Understand and interpret Level II	Desirable to know	Lecture with case discussion or suitable example	MCQ Essay on each theory	SAQ/Viva	

					s to a physician							
Hom UG-OM-I.9.6	Information Holistic approach		Knows how	Discuss the development of Personality and factors determining it	Illustrate the process of personality development	Cognitive	Understand and interpret Level II	Desirable to know	Case scenario discussion	MCQ	SAQ	
Hom UG-OM-I.9.7	Information collection and Case Interpretation of data		Knows		Enumerate the Factors determining the Personality	Cognitive	Recall level I	Desirable to know	Case scenario discussion	MCQ	SAQ/Viva	
Hom UG-OM-I.9.9	Information Analysis Synthesis		Knows how	Assessment of personality	Describe the techniques of assessing Personality	Cognitive	Understand and interpret Level II	Nice to know	Case scenario discussion	MCQ	SAQ/Viva	

Hom UG-OM-I.9.10	Information collection	Personality and Homoeopathy	Knows	Implications of study of personality to homoeopath	Discuss the relevance of concept of Personality to a homoeopath	Cognitive	Understand and interpret Level II	Must know	Discussion with case scenario	MCQ	LAQ	Hor with Organon
Hom UG-OM-I.9.11	Problem Solving		Knows		Discuss the relevance of studying Personality from the perspective of Materia Medica	Cognitive	Understand and interpret Level II	Desirable to know	Discussion with scenario	MCQ	LAQ	Hor with MM

Semester 3 Topic 3-Bio-Psycho-Social development of Human Being

Sr.No 7	Generic Competency	Subject area	Millers Know/ Know how/Show how/Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.5.1	Information	Concept of Bio-Psycho-Social model for holistic care	Knows	Describe concept of Bio-Psycho-Social development of Human Being	Define the Bio-Psycho-Social model	Cognitive	Recall level I	Must know	Lecture	Ess	LAQ/ SAQ	Anatomy, Physiology
	Information Analysis Synthesis		Knows		Illustrate how each of the constituent of the Bio-psycho-social model gives a more comprehensive understandin	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	

					g of a human being							
	Holistic approach System based thinking		Knows how	Implications of the Bio-psycho-social approach	Discuss the significance of the Bio-psycho-social approach to a human being	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	
	Synthesis		Knows	Implications in homoeopathic care	Discuss the similarity between homoeopathic approach to a human being with Bio-psycho-social approach	Cognitive	Understand and interpret Level II	Must know	Lecture	LAQ	LAQ	Hor with Organon
Hom UG-OM-I.5.5	Information Synthesis		Knows how	Discuss Socio cultural basis of Behavior	Defines the role of culture in shaping human behavior.	Cognitive	Recall level I	Must know	Small group discussion	Chart preparation Assignment	SAQ	

Semester 3 Topic 4 Concept of Stress-Conflict: their genesis, types and effects on the mind and body

Sr.No	Generic Competency	Subject area	Millers Know/ Know how/Show how/Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.10.1	Information collection	Stress, Conflicts and Coping Mechanisms	Knows	Discuss the Concept of Stress and types of stress	Define Stress	Cognitive	Remember and Recall Level I	Must know	Presentation with case let	MCQ	LAQ	Observation in any departmental OPD/ IPD
Hom UG-OM-I.10.2	Information and analysis		Knows		Classify the types of stress	Cognitive	Understand and interpret Level II	Must know	Presentation with case let	MCQ	LAQ	
Hom UG-OM-	Information		Knows how		Identify the sources of Stress	Cognitive	Understand and	Must know	Presentation	MCQ	SAQ/Viva	

I.10.3							interpret Level II		with case let			
Hom UG-OM-I.10.4	Organize the data		Knows how		Discuss the effect of Stresses on Mind and Body	Cognitive	Understand and interpret Level II	Desirable to know	Presentation with case let	MCQ	SAQ/Viva	
Hom UG-OM-I.10.5	Information		Knows	Concept of Conflict and types	Define Conflict	Cognitive	Recall level I	Must know	Presentation with case let	MCQ	SAQ/Viva	Observation in any departmental OPD/ IPD
Hom UG-OM-I.10.6	Information collection		Knows		State the stages of Conflict	Cognitive	Recall Level I	Must know	Presentation with case let	MCQ	SAQ/Viva	Observation in any departmental OPD/ IPD
Hom UG-OM-I.10.7	Organize the data		Knows how		Enumerate the types of Conflict	Cognitive	Recall Level I	Must know	Presentation with case let	MCQ	SAQ/Viva	Observation in any departm

												ental OPD/ IPD
Hom UG-OM-I.10.8	Analysis Synthesis		Know	Describe the relationship between stress and conflict	Discuss the relationship between Stress and Conflict	Cognitive	Understand and interpret Level II	Desirable to know	Presentation with case let	MCQ	SAQ/Viva	Observation in any departmental OPD/ IPD
Hom UG-OM-I.10.9	Information		Know	Discuss the concept of Coping Mechanisms and their use	Define Coping mechanism	Cognitive	Recall Level I	Must know	Presentation with case let	MCQ	SAQ/Viva	Observation in any departmental OPD/ IPD
Hom UG-OM-I.10.10	Information		Knows how		Enumerate the types of Coping mechanisms	Cognitive	Recall Level I	Must know	Presentation with case let	MCQ	SAQ/Viva	Observation in any departmental OPD/ IPD

Hom UG-OM-I.10.1 1	Problem solving		Knows how		Discuss the utility of Coping mechanism while dealing with Stress	Cognitive	Understand and interpret Level II	Must know	Presentation with case let	MCQ	MCQ	Observation in any departmental OPD/ IPD
	Holistic approach System based thinking		Knows how	Discuss successful resolution of conflict	Evaluate the role of learning and adaptation in ensuring resolution of stress	Cognitive	Understand and interpret Level II	Must know	Lecture with case example	LAQ	LAQ	
	Synthetic	Application of stress-conflict in Homoeopathy	Shows How	Exploring effects of stress-conflict in Homoeopathy	Explore the reflection of conflict in Hom Materia Medica	Cognitive	Problem solving III	Must know	Lecture	LAQ	LAQ	

Semester 3 Topic- 5- Applied Psychology: Clinical, Education, Sports, Business and Industrial

Sr.No	Generic Competency	Subject area	Millers Know/ Know how/ Show how/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
Hom UG-OM-I.11.1	Information Collection	Applied Psychology	Knows	Understand the application of Psychology in the different fields of Clinical, Education, Sports, Business, Industrial	Define the following terms in Applied Psychology viz Clinical, Business, Education, Sports, Industrial	Cognitive	Recall Level I	Must know	Discussion on the utility of the subject in multiple human resources areas	MCQ	SAQ	
	Information management		Knows		Illustrate the utility of subject Psychology in various fields	Cognitive ? Psycho-motor	Understand and interpret Level II	Desirable to know	Library references	SAQ	SAQ/Viva	

Semester 3 Topic 6: Psychology and its importance in Homoeopathic practice for Holistic Management of the patient

	Generic Competency	Subject area	Millers Know/ Know how/ Show how/ Does	Specific competency	Specific Learning Objectives / Outcomes	Bloom's domain	Guilbert's level	Must know / desirable to know / nice to know	TL method / media	Formative Assessment	Summ-ative Assessment	Integration - Horizontal / Vertical / Spiral
	Systems thinking	Psychology and Homoeopathy for Holistic management	Knows	Summarizing the course of Psychology	Discuss the ways in which Psychology may contribute to the holistic management of the patient	Cognitive	Understand and interpret Level II	Must know	Lecture and discussion	LAQ	LAQ	

Teaching-Learning Methods

a. Classroom teaching
    i. Lecture
    ii. Demonstration
    iii. Group discussion
    iv. Problem based learning
b. Practical
    i. Psychological theories –Models / Experiments / Any activity
    ii. Facial recognition spotting
c. Individual learning
    i. Assignment
    ii. Short project -e.g. searching MM or Repertory for representation of emotions, thoughts and behaviour

V Practical – Lab work – Field – Clinical Hospital work

a. Journal club: a team of students to present the understanding of current development in psychological aspects of every day events
b. Field work - Some survey for identification of psychological disturbance in Common Man
c. Clinical Hospital Work- Small project on psychometric tests.

VI No of Teaching Hours: Theory

Sr. No	Topic	No of lectures	Non-lectures
1.	Introduction to the study of Mind in Homoeopathy	3	-
2.	Psychological organization and the interrelationship of Thought (Cognition), Feelings (Affect) and Behaviour (Conation); Conscious and Unconscious elements	2	1

3.	Physiological basis of behaviour - the place of conditioned and unconditioned reflex	3	1
4.	Understanding Behavior and Functioning and expressions in Repertory and Materia Medica	4	2
5.	Understanding Emotion, its different definitions and expressions in Repertory and Materia Medica	5	3
6.	Understanding Intellect: Attention, memory and its function and expression in Repertory and Materia Medica	4	3
7.	Understanding Intellect: Perception and expressions in Repertory and Materia Medica	3	2
8.	Understanding Intellect: Thinking, intelligence and its measurement and expressions in Repertory and Materia Medica	4	2
9.	Motivation and their types with role in our lives	2	2
10.	Learning and its place in adaptation	4	2
11.	Growth and development of Mind and its expressions from Infancy to old age	4	2
12.	Structure of Personality, the types, their assessment, relationship to Temperament and representation in Materia Medica	4	2
13.	Conflicts: their genesis and effects on the mind and body	3	1
14.	Applied Psychology: Clinical, Education, Sports, Business, Industrial	2	-
15.	Psychology and its importance in Homoeopathic practice	2	-

	Total	50	22

8. Assessment

8A- Number of papers and Mark Distribution

Sr. No.	Course Code	Papers	Theory	Practical	Viva Voce	Internal Assessment Practical	Grand Total
1	HomUG-OM-I	1	100	50	40	10	200

8B - Scheme of Assessment (formative and Summative)

Sr. No	**Professional Course**	**1st term (1-6 Months)**	**2nd Term (7-12 Months)**	**3rd Term (13-18 Months)**	
1	First Professional BHMS	First PA + 1ST TT	2nd PA+2ND TT	3rd PA	UE

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

8 C - Evaluation Methods for Periodical Assessment

Sr. No	**Evaluation Dimensions**
1	Practical/Clinical Performance

2	Viva Voce, MCQs, MEQ (Modified Essay Questions/Structured Questions)
3	Open Book Test (Problem Based)
4	Reflective writing
5	Class Presentations; Work Book Maintenance
6	Problem Based Assignment
8	Co-curricular Activities, (Social Work, Public Awareness, Surveillance/ Prophylaxis Activities, Sports or Other Activities which may be decided by the Department).
9	Small Project

8D - Scheme of Assessment (Formative)

Sr. No	**Professional Course**	**1st term (1-6 Months)**		**2nd Term (7-12 Months)**		**3rd Term (13-18 Months)**
1	First Professional BHMS	1stPA	1ST TT	2nd PA	2ND TT	3rd PA
		10 Marks Practical/Viva	50 Marks Practical/ Viva	10Marks Practical/Viva	50 Marks Practical/ Viva	10Marks Practical/Viva

For Internal assessment, Only Practical/Viva marks will be considered. Theory marks will not be counted)

8E - Method of Calculation of Internal Assessment Marks for Final University Examination:

PA1 Practical/Viva (10 Marks) **A**	PA2 Practical/Viva (10 Marks) **B**	PA3 Practical/Viva (10 Marks) **C**	Periodical Assessment Average PA1+PA2+PA3/3 **D**	TT1 Practical/Viva (50 Marks) **E**	TT2 Practical/Viva (50 Marks) **F**	Terminal Test Average TT1+ TT2/ 100*10 **G**	Final Internal Assessment Marks **D+G/2**

PA: Periodical Assessment; TT: Term Test; UE: University Examinations

8 F - Paper Layout

Summative assessment:

Theory- 100 marks

Section –I-50 marks-Organon

MCQ	**5 marks**	**10min**
SAQ	**25 marks**	**50 min**
LAQ	**20 marks**	**30 min**

Section –II-50 marks- Psychology

MCQ	**5 marks**	**10min**
SAQ	**25 marks**	**50 min**
LAQ	**20 marks**	**30 min**

8 G – I – Distribution of Theory Exam - Organon

Sr. No.	Paper			D Type of Questions "Yes" can be asked. "No" should not be asked		
	A List of Topics	B Terms	C Marks	MCQ (1mark)	SAQ (5 Marks)	LAQ (10 Marks)
1	Introductory Topics	I	Refer Next Table	Yes	Yes	No
2	Logic	I		No	Yes	No
3	§1-27&105-145 of Organon of medicine, §105 to 145	II & III		No	Yes	Yes
4	The Physician – Purpose of Existence, Qualities, Duties, Knowledge	III		Yes	Yes	Yes
5	Vital Force – Dynamisation – Homoeopathic Cure – Natures Law of Cure & Implications – drug proving	III		Yes	Yes	Yes

8 G – II – Theme Table - Organon

Theme*	Topic	Term	Marks	MCQ's	SAQ's	LAQ's
A	Introductory Topics	I	10	Yes	Yes	No
B	Logic	I	05	No	Yes	No
C	§1-27&105-145 of Organon of medicine, §105 to 145	II & III	25	No	Yes	Yes
D	The Physician – Purpose of Existence, Qualities, Duties, Knowledge	III	10	Yes	Yes	Yes

Theme table: -Psychology

Theme*	**Topics**	**Term**	**Marks**	**MCQ's**	**SAQ's**	**LAQ's**
A	Introduction to psychology	I	05	NO	Yes	No
B	Psychological organization of Mind –Structural and Functional	I	10	Yes	Yes	Yes
C	Understanding Emotion/thinking/ Behaviour	I	10	Yes	Yes	Yes
D	Motivation and their types with role in our lives	I	05	Yes	Yes	Yes
E	Growth and development	II	10	Yes	Yes	Yes
F	Personality development and stress management	III	05	NO	yes	no
G	Applied Psychology	III	05	No	Yes	no

8 H Question paper Blue print :

Sections I : Organon – 50 Marks

A Question Serial Number	B Type of Question	Question Paper Format (Refer table 4FII theme table for themes)
Q1	Multiple Choice Questions (MCQ) 5 Questions 1 mark each All Compulsory Must Know part – 3 MCQ Desirable to know – 2 MCQ Nice to know – NIL	Theme A Theme A Theme A Theme A Theme A
Q2	Short Answer Questions (SAQ) 5 Questions 5 Marks Each All Compulsory Must Know part – 5 SAQ Desirable to Know – NIL Nice To Know - NIL	Theme A Theme B Theme C Theme C Theme C
Q3	Long Answer Questions (LAQ) 2 Questions 10 Marks Each All Compulsory All questions on must know Desirable to Know – NIL Nice To Know - NIL	Theme C Theme D

Section-II- Psychology -50 marks

Question Serial Number	**Type of Question**	**Question Paper Format** **(Refer table 4 F II Theme table for themes)**
Q1	All compulsory Multiple choice Questions (MCQ) 5 Questions -1 mark each Must know – 3MCQ Desirable to know-1 MCQ Nice to know -1 MCQ	Theme B +C+E+F+G
Q2	Short answer Questions (SAQ) 5 Questions 5 Marks Each All compulsory Must know part: 3 SAQ Desirable to know: 1 SAQ Nice to know: 1 SAQ	Theme A+B+C+D+E+F+G
Q3	Long answer Questions (LAQ) 2 Questions 10 marks each All compulsory Must know part: 2 LAQ	Theme B+C+ E+F+G

8 I - Distribution of Practical Exam

Practical -100

Practical Organon: 50 marks

Practical	25 marks
Viva voce	20 marks
Internal assessment	5 marks

Practical Psychology: 50 marks

Practical	25 marks
Viva voce	20 marks
Internal assessment	5 marks

9. References

I. Text book/s

1. Hahnemann S. Organon of medicine. 6ed
2. Sarkar. B. K. Hahnemann's organon of medicine
3. Roberts H. A. The principles and Art of cure by homoeopathy
4. Kent J. T. Lecture's on homoeopathic philosophy
5. M. L. Dhawale. Principles & Practice of Homoeopathy

6. Hughes Richard The Principles and Practice Of Homoeopathy
7. Close Stuart: The genius of homoeopathy
8. Allen J Henry: The Chronic Miasm With Repertory
9. Banerjee P N.: Chronic diseases- Its cause and cure

II. Reference books

1. Arya M.P (2018): A study of Hahnemann's Organon of medicine
2. Singh Mahindra: Pioneers Of Homoeopathy
3. Vithoulkas George (2002): Science of Homoeopathy

References/ Resources: Standard textbook: for Psychology

1. Shelley E Tylor. 10th edition (2018) Health psychology
2. Shashi Jain 4th edition (2014) Introduction to psychology
3. Psychology textbook for class XI.7th edition National Council for Educational Research and training
4. Psychology textbook for class XII 7th edition National Council for Educational Research and training
5. Morgan Clifford Thomas 7th edition (2017) Introduction to Psychology
6. Alder (2009) Psychology and Sociology applied to medicine
7. Chavan (2013), Community Mental Health in India
8. Munn (2010) Norman Normal Psychology
9. Baron Misra (2016) Psychology
10. Susan (2011) Ayers Psychology for Medicine
11. Diana Papilia (2001) Developmental psychology
12. Atkinsons & Hilgard (2015) Introduction to Psychology

****

10. LIST OF CONTRIBUTORS:

ORGANON AND PHILOSOPHY

Dr Ajay Dahad

Principal, Professor/Head, Organon of Medicine & Homoeopathic Philosophy

Smt. K. B. Abad Homoeopathic Medical College, Chandwad-423101 Dist. Nashik (MS)

Dr Alpesh Arunbhai Shah

Principal, Professor of organon of medicine
Pioneer homoeopathic medical college and hospital, Vadodara

Dr. Neeraj Gupta

Professor, Nehru Homoeopathic Medical College, Delhi

Dr. Mihir Parikh

Professor, Smt. Malini Kishore Sanghvi Homoeopathic Medical College, Karjan

Dr. Nimish Mehta

Reader, Smt. Chandaben Mohanbhai Patel Homeopathic Medical College, Mumbai

Dr. K. Shivprasad

Principal, Yenepoya homoeopathic medical college, Mangalore

FUNDAMENTALS OF PSYCHOLOGY

Dr Sunita Nikumbh,

Dr M L Dhawale Memorial Homoeopathic Institute Palghar

Dr Jayashree Janagam

Asst. Professor, Dept. of Psychiatry, National Homoeopathy Research Institute in Mental Health, Kottayam,

Dr. Mahendra Gaushal

Principal, Sonajirao Kshirsagar Homoeopathic Medical College, Beed

Dr. Girish Navada

Professor, Father Muller Homoeopathic Medical College, Mangalore

COMPETENCY BASED DYNAMIC CURRICULUM FOR FIRST BHMS PROFESSIONAL COURSE

(Applicable from Batch 2022-2023 onwards for 5 years or until further notification by National Commission for Homoeopathy whichever is earlier)

(Yoga for Health Promotion)

HOMOEOPATHY EDUCATION BOARD

NATIONAL COMMISSION FOR HOMOEOPATHY

MINISTRY OF AYUSH, GOVERNMENT OF INDIA

JAWAHAR LAL NEHRU BHARTIYA CHIKITSA AVUM HOMOEOPATHY ANUSANDHAN BHAVAN

No.61-65, Institutional Area, opp. 'D' block, Janak Puri, New Delhi-110 058

Subject Code: HomUG-Yoga I

Subject: Yoga for Health Promotion

The syllabus of Yoga for the 1st BHMS students should include the basic concept of Yoga and its philosophy, with a clear idea of the different section of asana, pranayama, kriya and meditation. Total 30 hours of class will include practical training. The students will be trained in understanding the relationship between Yoga and Homoeopathy in a wholistic approach, and the point of application of yoga in part of treatment.

The topic and respective allotted hours are as follows-

Sr.no.1	TOPIC	CLASS
1.	Yoga definition, concept, types, benefits, and origin.	Hours 1
2.	History and patanjali, yoga philosophy and development of yoga.	Hours 1
3.	Astanga, yoga, hathayoga.	Hours 1
4.	Asana-types, examples, benefits.	Hours 1
5	Corelation of vital force and prana.	Hours 1
6	Meditation-types, methods, benefits.	Hours 1
7	Kriya-types, methods, benefits.	Hours 1
8	Relationship of yoga and homoeopathy on wholistic plane.	Hours 1
9	Application of yoga in terms of hahnemann's accessory circumtanses.	Hours 1
10	Pranayanam, types, benefits.	Hours 1
11	Practical learning about asanas (postures)-pawanmuktasna, backstreching, sunsalutation, classical sequences.	Hours 5
12	Practical learning about Breathing, pranyama including abdominal, thoracic, clavicular, hasthamudra, vilom, lung sensitising.	Hours 5
13	Practice of relaxation, tense and relax, short yoganidra, extended, savasana, yoganidra, sankalpa.	Hours 5
14	Meditation practice, sitting posture, kaya sthairam, omchanting, trataka.	Hours 5