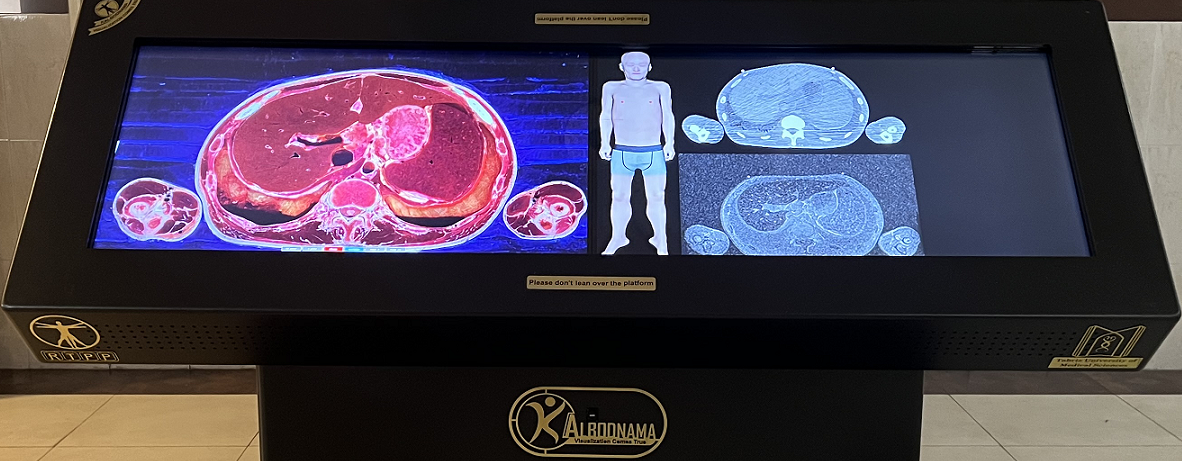
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**STUDY GUIDE**

**DEPARTMENT OF ANATOMY**

****

**LAHORE MEDICAL AND DENTAL COLLEGE**

**MISSION OF LMDC**

The Lahore Medical and Dental College is committed in its pursuit of excellence to providing the best academic facilities and atmosphere to its students.

Our mission is to: “Train future leaders of medicine who set new standards in knowledge, care and compassion”.

The well qualified and committed faculty of LMDC provides combination of nurturing support and challenge to the students to reach their maximum potential.

**DEPARTMENTAL FACULTY**

PROF. DR. IFFAT BADAR

HOD/PROFESSOR

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PROF. DR. ARUNA BASHIR

PROFESSOR



DR. ANIS FATIMA

ASSOCIATE PROFESSOR



DR. SHUMAILA SHAKOOR

ASSISTANT PROFESSOR



DR. ANUM DOGAR

ASSISTANT PROFESSOR



DR. SHAMAILA EJAZ

DEMONSTRATOR



DR. MISHAL AMJAD

DEMONSTRATOR



DR. HASANA TARIQ

DEMONSTRATOR



DR. SANA ZUBAIR

DEMONSTRATOR



DR. MAHAM QAISER

DEMONSTRATOR



DR. AMMARA TABASSAM

DEMONSTRATOR



DR. ZOVERA KHALID

DEMONSTRATOR



DR. USAMA TARIQ

DEMONSTRATOR



DR. HAFIZA HUSSAIN

DEMONSTRATOR



DR. SAFWAN TARIQ

DEMONSTRATOR



DR. HIRA YASEEN

DEMONSTRATOR



DR. ZAHRA NAWAZ

DEMONSTRATOR



M.IMRAN

LABORATORY ASSISTANT



M. WASEEM

LABORATORY ASSISTANT



M. ISMAEEL KHAN

LABORATORY ASSISTANT



M. TARIQ

LABORATORY ATTENDANT



SHAHZEB IMRAN

LABORATORY ATTENDANT



HUMAYUN SARFRAZ

MUSEUM KEEPER



ARIF MASIH

EMBALMER



M. AMJAD

OFFICE BOY



RAFAQAT MASIH

CLEANER



AMIR MASIH

CLEANER



**HIERARCHY OF DEPARTMENT OF ANATOMY**

|  |
| --- |
| PROFESSOR/HOD  DR IFFAT BADAR |

|  |
| --- |
| PROFESSOR  DR ARUNA BASHIR |

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| --- |
| ASSOCIATE PROFESSOR  DR ANIS FATIMA |

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| --- |
| ASSISTANT PROFESSOR  DR SHUMAILA SHAKOOR  DR. ANUM DOGAR |

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| DEMONSTRATORS | | |
| DR SHAMAILA EJAZ  DR MISHAL AMJAD  DR MAHAM QAISER  DR AMMARA TABASSAM | DR ZOVERA KHALID  DR HIRA YASEEN  DR SAFWAN TARIQ CH.  DR HASANA TARIQ MALIK | DR SANA ZUBAIR  DR ZAHRA NAWAZ  DR HAFIZA HUSSAIN  DR M. USAMA TARIQ |

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| --- | --- | --- | --- | --- | --- |
| LABORATORY ASSISTANTS | MUSEUM KEEPER | CLEANER | OFFICE BOY | LABORATORY ATTENDANTS | EMBALMER |
| M. ISMAEEL KHAN  M. IMRAN  M. WASEEM | HUMAYUN SARFRAZ | RAFAQAT MASIH  AMIR MASIH | AMJAD | M. TARIQ  SHAHZEB IMRAN | ARIF MASIH |

**INTRODUCTION**

Medical education is a life-long process and MBBS curriculum is a part of the continuum of education from pre-medical education, MBBS, proceeding to house job, and post-graduation. PMDC outlines the guiding principles for undergraduate medical curriculum and has defined the generic competencies and desired outcomes for a medical graduate to provide optimal health care, leading to better health outcomes for patients and societies.

**Level of Student:** 2nd Year MBBS

**Duration of Session:** Feb.2023 – Nov. 2023

**LEARNING OUTCOMES OF ANATOMY**

**NEURO AND GROSS ANATOMY**

The study of gross anatomy must lay emphasis on applied anatomy as related to clinical medicine and surgery. For teaching, actual dissection of cadaver, dissected specimens, models, and computer aided programs shall be used. Normal images of different diagnosis techniques i.e. Xrays and CT scans, MRI and Ultra-sonography shall also be introduced.

The time for dissection of the cadaver for each region is as under:

1. Neuroanatomy including Brain and Spinal cord 09 weeks

2. Head and Neck 13 weeks

3. Abdomen and Pelvis 13 weeks

**NEUROANATOMY COURSE OBJECTIVES**

After the end of the course, the students are able to:

1. Define, enumerate and describe the structure and functions of receptors.

2. Define and describe motor end plates and their functions.

3. Understand and describe the meninges of brain and spinal cord.

4. Describe subdural and subarachnoid spaces including subarachnoid cisterns.

5. Understand and describe internal structure of spinal cord at different levels:

6. Understand and describe ascending and descending tracts of spinal cord, their functions and effects of their lesions.

7. Understand and describe internal structure of medulla oblongata.

8. Comprehend and describe the internal structure of pons.

9. Understand and describe internal structure of mid brain.

10. Comprehend and describe the surfaces of cerebral hemisphere, its lobes, their sulci and gyri.

11. Locate, identify and describe functions of different functional areas of the brain.

12. Locate, identify and describe different types of projection and association fibres of brain and their functions.

13. Identify, locate and describe hypothalamus, its nuclei and their connection and functions.

14. Identify, locate and describe thalamus, its nuclei and their connection and functions.

15. Identify, locate and describe metathalamus and its connections and functions.

16. Understand and describe the ventricular system of the brain.

17. Comprehend and describe production and circulation of CSF and clinical conditions associated with it.

18. Comprehend, describe and discuss blood supply of the brain and spinal cord and the effect of hemorrhagic and thrombotic lesions.

19. Describe intra cranial course of cranial nerves and their applied aspects

20. Identify, locate and describe cranial nerves nuclei and their connection and functions.

21. Understand and describe different lobes of cerebellum, its white and grey substances including the deep cerebellar nuclei.

22. Understand afferent and efferent connections of cerebellum and correlated these to its functions.

23. Understand and describe the signs and symptoms of cerebellum disease with logical explanation.

24. Understand and describe clinical conditions related to nervous system.

25. Comprehend and understand neuroanatomical basis of the following:

a) Hemiplegia / hemiperesis.

b) Upper motor and lower motor neuron lesions.

c) Parkinsonism

d) Syringomyelia.

e) Hemi-section / complete section of spinal cord.

f) Cerebellar ataxia

g) Other clinical conditions

**HEAD AND NECK COURSE OBJECTIVES**

On completion of the course of Head and Neck, the students are able to:

1. Describe mandible and different normae of the articulated skull.

2. Identify individual bones of the skull, their parts with important features.

3. Give post-natal growth changes in skull and face.

4. Comprehend cranial fossae, identify the foramina of the skull base and the structures passing through them.

5. Understand the vertebral column as a whole including sacrum and coccyx; describe regional features of the vertebrae, intervertebral joints, the movements thereof, and comprehend clinical problems of the region.

6. Identify, comprehend and describe cervical vertebrae, and the joints of the region i.e. temporo-mandibular, intervertebral, and cranio-vertebral. (cricothyroid and cricoarytenoid joints).

7. Identify and describe important muscles of the region i.e. muscles of: Facial expression, Mastication, prevertebral, postvertebral, infra and suprahyoid, suboccipital, tongue and palate; (pharynx, and larynx) comprehend their actions nerve supply, effect of injury to them and clinical tests applied for diagnosis.

8. Name and identify muscles of the floor of the mouth, sternocleidomastoid, trapezius, levator scapulae, and describe their origin, insertion, nerve supply, actions, important relations and effects of injury to their nerves and clinical tests to diagnose the nature of injury.

9. Identify and describe important arteries of the region, their branches and distribution i.e. subclavian, common, internal and external carotid arteries.

10. Comprehend clinical importance related to the arteries of head and neck and their branches

11. Identify subclavian, internal, external, and anterior Jugular veins, give their course, relationship, tributaries and clinical importance.

12. Identify and describe cranial venous sinuses and give their clinical significance.

13. Locate, identify and enlist the regional lymph nodes and describe the scheme of lymphatic drainage of the region.

14. Understand and describe the course and distribution of the cervical spinal and cranial nerves; comprehend formation of Cervical and Brachial plexuses, describe their branches and distribution.

15. Understand and describe clinical conditions related to the nerve plexuses and their clinical manifestations.

16. Comprehend, understand and clearly describe the effects of injuries to different nerves and their clinical tests.

17. Identify sympathetic trunk and describe the scheme of sympathetic and parasympathetic innervations of the region, including the four parasympathetic ganglia, their roots, branches and distribution along with the clinical and applied anatomy..

18. .Identify and describe the boundaries, contents and subdivisions of the anterior and posterior triangles of the neck.

19. Understand and describe the superficial and deep fasciae of the region and correlate different fascial planes to their clinical importance.

20. Identify and describe the viscera of the region i.e. salivary, thyroid, parathyroid glands, trachea and esophagus, and describe their anatomy and its applied aspects correctly

21. Identify the anatomical features of the oral cavity, tongue, cheek, lips, gums and teeth, and describe these in detail with particular emphasis on their clinical applications.

22. Understand and describe the anatomy of the scalp, orbital and cranial cavities, their contents including meninges with highlights on important clinical aspects.

23. Understand and describe the anatomy of the nasal cavity, Para nasal sinuses, eye ball and external, middle and internal ear along with the clinical aspects.

24. Understand and describe the anatomy of pharynx, its muscles, their nerve supply and actions; clinical and applied aspects of pharynx.

25. Comprehend and describe the anatomy of larynx, its joints, muscles, their nerve supply and actions; clinical conditions related to the organ.

26. Correlate the anatomical information of the region to their clinical applications.

27. Interpret normal radiographs, CT Scans, MRI, and Ultrasound images.

**Additional Clinical Correlates**

Cranial nerves distributions and lesions, dislocation of temporomandibular and intervertebral joints, scalp wounds, danger area of face, Little’s area, Horner’s syndrome, cavernous sinus thrombosis, intracranial hemorrhages, tracheostomy, mumps, sinusitis and retropharyngeal abscess, lymph nodes and lymphatic drainage of head and neck and, different conditions associated with lymphatics. Important muscles of head and neck their functions and effect of their nerve lesions.

**COURSE OBJECTIVES OF ABDOMEN AND PELVIS**

On completion of the Gross Anatomy of Abdomen and Pelvis, the students are able to:

1. Develop a sound understanding of the topographic anatomy of the regions.

2. Mark the regions of the abdomen on the surface of the body.

3. Mark the important abdominal and pelvic viscera on the surface of the body

4. Understand the importance of percussion notes in eliciting the extent of resonant and nonresonant viscera and their clinical importance.

5. Give a description of the Anatomy of the anterolateral and posterior abdominal walls.

6. Understand and give clear description of inguinal canal, different varieties of external hernias and their complications.

7. Understand the peritoneum, peritoneal cavity and possible sites of internal hernias along with their clinical features.

8. Comprehend, understand and describe the abdomino-pelvic fasciae and their clinical importance.

9. Give a precise account of the Anatomy of abdominal and pelvic viscera, muscles, nerves and blood vessels of the regions and correlate anatomical information to common clinical conditions.

10. Understand the clinical effects and apply clinical tests to verify injuries to different nerves of the region.

11. Develop clear concepts of anatomy of normal male and female pelvises, and differences between them.

12. Understand the dimensions of the normal and contracted adult female pelvis and their clinical importance in the mechanism of delivery.

13. Understand the anatomy of the perineal region in both male and female and comprehend the anatomical basis of clinical conditions of the area.

14. Understand anatomical basis of possible birth injuries to the mother in difficult labor and the clinical conditions produced thereafter.

15. Understand the scheme of the regional lymphatic drainage and lymph nodes. 16. Comprehend normal radiological anatomy of the region, CT Scans, MRI, Ultrasound and, other diagnostic techniques.

**Additional Clinical Correlates**

Portosystemic anastomosis, spread of carcinoma stomach, duodenal and peptic ulcer, appendicitis, hemorrhoids, anal fistula, anterior abdominal wall hernias, abdominal incisions, varicocele, hydrocoele, benign prostatic hyperplasia and carcinoma of prostate and uterus prolapse

**SYSTEMIC HISTOLOGY**

At the end of the course, the students are able to:

**Digestive System:**

1. Name and describe the epithelium lining the oral cavity, tongue, gums, hard and soft palate, pharynx and lips and, explain the histology of tongue.

2. Understand and describe the histological structure of oesophagus, stomach, small intestine, large intestine, appendix and anal canal; explain the change in structure of their epithelium in relations to the function.

3. Comprehend and describe the histological structure and functions of salivary glands.

4. Understand and describe the histological structure and functions of Liver, Pancreas and Gall Bladder.

**Urinary System:**

Comprehend and describe the histological structure of kidney, ureter and urinary bladder, and their functions.

**Male Reproductive System:**

Comprehend and describe histological structure of testis, epididymis, vas deferens, seminal vesicle and prostate, and relate it to their functions.

**Female Reproductive System:**

Understand and describe histological structure of ovaries, fallopian tube, uterus and vagina, and explained their functions related to their structure.

**Endocrine System:**

Understand and describe the histological structure and functions of the following glands:

1. Pituitary

2. Thyroid

3. Parathyroid

4. Adrenal

5. Islets of Langerhans.

**Eye and Ear:**

1. Understand and describe the histological structure of eyeball with emphasis on cornea and retina, and give their functions related to their structure.

2. Comprehend and describe the Membranous Labyrinth and give the histological structure of different parts; correlate their functions to the structure.

**Nervous System:**

Understand and describe the histological structure of spinal cord, cerebellum and cerebrum and correlate it to the functions.

Identify, draw and label light microscopic structures of above mentioned tissues.

**EMBRYOLOGY**

At the end of the course, the students are able to:

**Head and Neck:**

1. Understand and describe the development and derivatives of pharyngeal apparatus (arch, cleft, pouch and membrane).

2. Comprehend and describe the development of tongue.

3. Describe the development of thyroid gland.

4. Understand and describe the development of pituitary gland.

5. Comprehend and describe the development of face and palate.

6. Understand different congenital malformations of the region.

**Digestive System, Body Cavities and Diaphragm:**

1. Understand and discuss the development of the body cavities, mesenteries and diaphragm.

2. Comprehend and describe the development of gastrointestinal tract (fore-gut, mid-gut and hind- gut).

3. Understand and describe the development of liver, pancreas and gall bladder.

4. Understand and describe the development of spleen.

5. Understand different congenital malformations of the region.

**Respiratory System:**

Comprehend and describe the development of upper and lower respiratory passages, and give their congenital anomalies.

**Cardiovascular System:**

1. Describe the development of heart, aortic arches, aorta, superior and inferior vena cavae and portal vein.

2. Describe the foetal circulation and changes at birth.

3. Understand and describe the congenital anomalies of cardiovascular system.

**Urinary System:**

Comprehend and describe the development of kidneys, ureters, urinary bladder and urethra, and their congenital malformations.

**Reproductive System:**

1. Understand and describe the development of testes, epididymis, vas deferens, seminal vesicles and prostate.

2. Comprehend and describe the development of the ovaries, uterus and vagina.

3. Describe the development of external genital organs.

4. Comprehend and describe congenital abnormalities of the regions.

**Nervous System:**

1. Name different brain vesicles, comprehend and describe their derivatives.

2. Understand and describe the development of spinal cord.

3. Comprehend and describe the derivatives of neural crest.

4. Understand and describe congenital abnormalities of the nervous system.

**Ear:**

1. Understand and describe the development of external, middle and internal ear.

2. Describe congenital abnormalities of the region.

**Eye:**

Comprehend and describe the development of lacrimal apparatus, eyeball and their congenital abnormalities.

**CONTENT/SYLLABUS FOR 2ND PROFESSIONAL MBBS (PMDC AND UHS)**

**SPECIAL EMBRYOLOGY**

1. Head and Neck

• Pharyngeal apparatus (including pharyngeal arches, pharyngeal pouches & pharyngeal clefts)

• Tongue

• Thyroid

• Parathyroid

•Thymus

• Pituitary

• Upper respiratory system

• Face and palate

1. Body cavities

• Development of body cavities

• Formation of diaphragm

3. The respiratory system

4. The cardiovascular system

• Heart

• Great vessels

• Fetal circulation and changes at birth

5. The urinary system

• Development of Kidney

• Urinary bladder

• Urethra

• Development of adrenal glands

6. The male reproductive system

•Testis

• Genital ducts

• External genitalia

7. The female reproductive system

•Ovaries

• Oviducts

•Uterus

• Vagina

• External genitalia

8. The Musclo-skeletal system

• Development of skeleton

• Development of muscles

9. Development of Limbs

10. Development of Integumentary System(consisting of development of skin and its appendages and development of mammary glands)

11. Special Senses (eye and ear)

12. Nervous system

13. Digestive system

• Division of Gut tube

• Mesenteries

• Liver, Gall bladder, Pancreas, Spleen

**GROSS ANATOMY**

1. Head & neck

2. Brain and spinal cord

3. Abdomen and pelvis

**SPECIAL HISTOLOGY**

• Digestive System

• Respiratory System

• Urinary System

• Male Reproductive System

• Female Reproductive System

• Endocrine Glands

• Organs of Special Senses

**NEURO-ANATOMY**

• Spinal Cord

• Medulla Oblongata

• Pons

• Mid Brain

• Cerebellum

• Thalamus

• Hypothalamus

• Basal Ganglia

• Cerebral Cortex

• Autonomic Nervous System

During study of Gross Anatomy, emphasis should be given on applied aspect, radiological anatomy, surface anatomy and cross-sectional anatomy.

**TEACHING AND LEARNING METHODOLOGIES FOR ANATOMY**

* Interactive Lectures
* Gross Anatomy Demonstrations to Small Group
* Histology Practical Demonstrations to small group
* Power Point Presentations by students
* Clinico-Anatomical conferences
* Self Directed Learning
* Virtual dissection on Virtual Dissection Table

**LEARNING RESOURCES**

**RECOMMENDED BOOKS**

1. Clinically Oriented Anatomy by Keith L Moore.

2. Cunningham’s Manual of Practical Anatomy by G.J. Romanes, 15th Ed., Vol. II and III.

3. The Developing Human. Clinically Oriented Embryology by Keith L. Moore, 6th Ed.

4. Medical Histology by Prof. Laiq Hussain Siddiqui.

5. Neuroanatomy by Richard S.Snell.

**REFERENCE BOOKS**

1. Gray’s Anatomy by Prof. Susan Standring 39th Ed., Elsevier.

2. Clinical Anatomy for Medical Students by Richard S.Snell.

3. Clinical Anatomy by R.J. Last, Latest Ed.

4. Wheater’s Functional Histology by Young and Heath, Latest Ed.

5. Langman’s embryology

**ASSESSMENT METHODOLOGY SECOND PROF. MBBS**

**FORMATIVE**

**Theory:** Single best multiple choice question and short essay tests will be conducted according to the schedule given

Histology Practical Tests, Gross OSPE tests and viva voce will be conducted according to the schedule given

**2nd YEAR MBBS TEST SCHEDULE (ANATOMY)**

|  |  |
| --- | --- |
| **DATE** | **TEST** |
| 14-2-23 | Abdomen & pelvis substage 1 |
| 1-3-23 | Abdomen & pelvis substage 2 |
| 24-3-23 | Abdomen & pelvis substage 3 |
| 29-3-23 | Embryology test 1 |
| 7-4-23 | Abdomen & pelvis substage 4 |
| 17-19/4/23 | Abdomen & pelvis Final stage |
| 26-4-23 | Histology test 1 (Written) |
| 25-28/4/23 | Histology Practical Test 1 |
| 5-5-23 | Head & neck substage 1 |
| 22-5-23 | Head & neck substage 2 |
| 31-5-23 | Embryology test 2 |
| 9-6-23 | Head & neck substage 3 |
| 21-7-23 | Head & neck substage 4 |
| 11-8-23 | Head & neck substage 5 |
| 21-23/8/23 | Head & neck substage Final stage |
| 30-8-23 | Embryology test 3 |
| 18-9-23 | Brain substage 1 |
| 22-9-23 | Histology test 2 (Written) |
| 25-29/9/23 | Histology Practical Test 2 |
| 29-9-23 | Brain substage 2 |
| 9-11/10/23 | Brain substage Final stage |

**SUMMATIVE** (To be held at the end of 2nd Year MBBS)

1. **Written**
2. One paper for 2nd Year MBBS

**Marks Distribution of each paper:**

Paper Marks 90

Internal Evaluation Marks 10

Oral & Practical Marks 90

Internal Evaluation Marks 10

Total 200 Marks

**TABLE OF SPECIFICATIONS FOR SECOND PROF. MBBS WRITTEN PAPER (UHS)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TOPIC** | **MCQ** | **SEQ** |
| HISTOLOGY | Digestive system | 1 | 1 |
| Urinary system | 1 |
| Nervous system | 1 |
| Male reproduction system | 1 |
| Female reproductive system | 1 |
| Endocrine | 1 |
| Special scenes |
| EMBRYOLOGY | Body cavities , mesenteries and diaphragm | 1 | 1 |
| Respiratory system | 1 |
| Cardiovascular | 2 |
| Nervous system | 1 |
| Urinary system | 1 | 1 |
| Male reproductive system | 1 |
| Female reproductive system | 1 |
| Digestive system | 1 |
| Pharyngeal apparatus and face | 1 |
| BRAIN | External and internal structure of brain | 2 | 1 |
| External and internal structures of spinal cord | 2 |
| Cranial nerves , their nuclei, and their intracranial courses | 1 |
| Blood supply of brain and spinal cord | 1 |
| Meninges cisternae and ventricles | 1 |
| PELVIS | Pelvic wall, Pelvis diaphragm, peritoneum, | 1 | 1 |
| Pelvic viscera and structures | 1 |
| Perineum and urogenital diaphragm | 1 |
| ABDOMEN | Abdominal wall | 1 | 1 |
| Peritoneum | 1 |
| Abdominal viscera’s and other structures | 4 | 1 |
| HEAD AND NECK | Cranial cavity, skull, cervical vertebra and joints of neck | 2 | 1 |
| Scalp, temple and face | 1 |
| Side of neck and triangles , back of neck and cervical fascia | 2 |
| Cranial nerves and ganglia | 2 |
| Orbit eye ball and ear | 1 | 1 |
| Parotid and temporal and infratemporal and submandibular regions | 2 |
| Mouth , pharynx and tongue | 2 |
| Nasal cavity and larynx | 1 |

25% MCQs and SEQs should clinical oriented or problem based

**MBBS 2nd Professional Part (II) OSPE**

Gross Anatomy, Radiological Anatomy & Embryology:

**Gross Anatomy**

1. Total No. of stations 12, each station will have 02 marks and 04 spots of identification.

2. Each station shall be given 1.5 min.

3. Total marks shall be 24.

Time per station: 1.5 minutes (18 minutes)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Region/Area | Station No. | No. of spots | Marks Each spot |
| 1. | Head and Neck | 1 | 4 | 2 |
| Head and Neck | 2 | 4 | 2 |
| Head and Neck | 3 | 4 | 2 |
| 2 | Abdomen | 4 | 4 | 2 |
| Abdomen | 5 | 4 | 2 |
| Abdomen | 6 | 4 | 2 |
| 3 | Pelvis | 7 | 4 | 2 |
| 4 | Brain | 8 | 4 | 2 |
| Brain | 9 | 4 | 2 |
| 5 | Radiological Anatomy | 10 | 4 | 2 |
| 6 | Special Embryology | 11 | 4 | 2 |
| Special Embryology | 12 | 4 | 2 |

**Arrangement of OSPE in Histology:**

1. Histology Practical Examination shall also be used to cover nearly all areas of the subjects.

2. Histology long slide and Viva shall be arranged simultaneously on the same day.

Histology OSPE and VIVA (Total Marks 20)

There shall be 10 slides fixed on 10 microscopes.

1. They will move from one to the next slide in a predetermined direction.

2. For each station one minute shall be given, students will give point/points of identifications for each slide

3. Total number of identifications spots 10

a. Each spot will be given 01 mark (0.5 marks for identification and 2 points of identification, 0.25 marks each)

b. Total marks allocated shall be: 10

4. Time consumed shall be 10 min

**Long Slide (Total Marks 10):**

5. Time: 15 minutes will be given for

Identification 1 mark

Drawing 1 mark

Labeling 1 mark

Interactive Examination Long Slide: 7 marks

**ANATOMY STRUCTURED VIVA**

The following areas shall be examined; the questions are framed with emphasis on those areas which are not easily evaluated in theory examinations. Course segments, the marks allocation and number of questions for each are given as under:

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. No. | Course Area | Marks Allocated | Minimum No. of Questions |
| 1 | Surface marking | 4 | 1 |
| 2 | Head & Neck | 10 | 2 |
| 3 | Brain & Spinal cord | 8 | 2 |
| 4 | Abdomen | 10 | 2 |
| 5 | Pelvis | 4 | 1 |
| 6 | Special Embryology | 10 | 2 |
| Total | | 46 | 10 |

Note: Materials for the examination shall be the responsibility of the Department/ College which should be put in place well before the time of the examination. Examination space and facilities shall be evaluated by the external examiner who will make sure that the movements of the candidate are well organized to maintain the transparency of the procedure.

**EXAM RULES AND REGULATIONS**

# Statutes

The Second Professional Examination shall be held at the end of second year MBBS class.

The examination in the subject of Anatomy shall be as follows:-

* 1. One written paper of 90 marks in Anatomy (including Histology) having two parts:
     1. Part I shall have forty five Multiple Choice Questions (MCQs) of 45 marks and the time allotted shall be forty five minutes.
     2. Part II shall have nine Short Essay Questions (SEQs) of 45 marks and the time allotted shall be two hours and fifteen minutes.
  2. Oral and Practical examination shall have 90 marks.
  3. The continuous internal assessment shall carry 20 marks i.e. 10% of the total allocated marks for the subject. The score will be equally distributed to the Theory and Practical Examinations.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Subject** | **Theory** | | **Practical** | | **Total** |
| Anatomy (Including Histology) | Part I MCQs | 45 Marks | Oral and Practical | 90 Marks | 200 |
| Part II SEQs | 45 Marks | Internal Assessment | 10 Marks |
| Internal  Assessment | 10 Marks |  |  |
|  | **100** |  | **100** |

1. The medium of Examinations shall be English.
2. No grace marks should be allowed in any examination or practical under any guise or name.

# Regulations

1. This examination shall be open to any student who:-
   1. has been enrolled/registered and completed one academic year preceding the second professional examination in a constituent/affiliated College of the University.
   2. has passed the First Professional MBBS Examination from University of Health Sciences or an examination from any other recognised University considered equivalent for the purpose by the Academic Council, not less than one academic year previously.
   3. has his/her name submitted to the Controller of Examinations, for the purpose of examination, by the Principal of the College in which he / she is enrolled.
   4. has his/her marks of internal assessment in all the subjects sent to the Controller of Examinations by the Principal of the College alongwith the admission forms.
   5. produces the following certificates duly verified by the Principal of his / her College:
      1. of good character;
      2. of having attended not less than three-fourth (75%) of the full course of lectures delivered and practical conducted in each of the subjects of the Examination. The Chairman of the College Academic Council / Principal of the College may condone for valid reasons deficiency up to 5% of lectures in written papers and 5% in practical. Candidates falling short of lectures or practical shall not be admitted to the examination but may be permitted to appear at the next examination if they attend 75% of the lectures delivered and practicals conducted up to the commencement of the next examination by remaining on the rolls of a College as regular student.
   6. The detainee students shall complete all the academic requirements including attendance in the year of detention like promoted students enrolled in the class.
2. The minimum number of marks required to pass this examination for each subject shall be fifty percent (50%) in written and fifty percent (50%) in the oral & practical examination and fifty percent (50%) in aggregate, independently and concomitantly at one and the same time.
3. Candidates who secure eighty five percent (85%) or above marks in any subject shall be declared to have passed “with distinction” in that subject and no candidate who does not pass in all the subjects of the Second Professional MBBS Examination as a whole at one and the same time shall be declared to have passed “with distinction” in any subject.
4. A candidate failing in one or more subject of the annual examination shall be provisionally allowed to join third professional class till the commencement of supplementary examinations. The candidate, however, shall have to pass the failed subjects in this supplementary examination failing which he / she shall be detained in the second professional. Under no circumstances, a candidate shall be promoted to the third professional class till he / she has previously passed all the subjects in the Second Professional MBBS Examination. If a student appears in the Supplementary Examination for the first time as he/she did not appear in the annual examination and failed in any subject in the Supplementary Examination, he/she will be detained in the same class and will not be promoted to the next class.
5. Any student who fails to clear Second Professional in four chances, availed or un - availed, and has been expelled on that account shall not be eligible for continuation of medical studies for MBBS and shall not be eligible for fresh admission as a fresh candidate in either MBBS or BDS
6. Every candidate shall forward his / her application for admission to the examination to the Controller of Examination, through the Principal of the College at least four weeks before the commencement of the examination accompanied by the prescribed fee. Awards of internal assessment in all the subjects of all the candidates shall be submitted to the Controller of Examinations along with Admission Forms for the annual examination. Internal assessment received after commencement of the examination shall not be accepted. The marks of internal assessment shall be submitted only once a year prior to annual examination and the same shall be counted for both annual and supplementary examinations. It is further emphasized that fresh internal assessment or a revision of assessment for supplementary examination shall not be permissible. However, it is required from the Colleges to submit a revised internal assessment for the detained students. The internal assessment award in a particular year will not be decreased subsequently detrimental to the detainee candidate. Proper record of the continuous internal assessment shall be maintained by respective departments of Medical Colleges.
7. Whenever completed admission form or the fee is received after the last date prescribed above, the candidate shall pay double the normal fee, provided that such application or fee is received at least fifteen days before the commencement of the examination.
8. The candidates shall pay their fee through the Principals of their respective Colleges who shall forward a bank draft / pay order / crossed cheque in favour of Treasurer, University of Health Sciences, Lahore along with Admission Forms.

**SCHEDULE/PLANNER**

**2ND YEAR MBBS TEACHING SCHEDULE FOR ABDOMEN & PELVIS**

|  |  |
| --- | --- |
| **DATE** | **TOPIC** |
| 30/Jan/23 | Anterior abdominal wall, Skin, Quadrants of abdomen, Fascia |
| 31/Jan/23 | Muscles of Anterolateral abdominal wall |
| 1/Feb/23 | Formation of rectus sheath, Applied aspects (Skin Incisions, cutaneous nerve supply, venous drainage, lymphatic drainage) |
| 2/Feb/23 | Inguinal Region (Boundaries and contents, clinical importance) |
| 3/Feb/23 | Male external genitalia, scrotum, testis, and Spermatic cords |
| 6/Feb/23 | Peritoneum (Dispositions) |
| 7/Feb/23 | Lesser and Greater omentum, mesocolon, |
| 8/Feb/23 | Mesentry, omental bursa, epiploic foramen |
| 9/Feb/23 | Supracolic/infracolic compartments/Rectouterine pouch/Recesses |
| 10/Feb/23 | Revision |
| 13/Feb/23 | Revision |
| **14/Feb/23** | **SUBSTAGE 1** |
| 15/Feb/23 | Esophagus, Stomach |
| 16/Feb/23 | Duodenum |
| 17/Feb/23 | Jejunum, Ileum, Large Intestine |
| 20/Feb/23 | Spleen, Pancreas |
| 21/Feb/23 | Pancreas |
| 22/Feb/23 | Celiac trunk, superior and inferior mesenteric vessels |
| 23/Feb/23 | Liver +Extrahepatic biliary apparatus |
| 24/Feb/23 | Portal vein, Portal circulation and Portocaval anastomosis, sympathetic plexuses |
| 27/Feb/23 | Revision |
| 28/Feb/23 | Revision |
| **1/Mar/23** | **SUBSTAGE 2** |
| 2/Mar/23 | Lumbar vertebrae |
| 3/Mar/23 | Posterior abdominal wall muscles, thoracolumbar fascia, abdominal wall |
| 13/Mar/23 | Vessels of posterior abdominal wall |
| 14/Mar/23 | Nerves of Posterior abdominal wall, ANS |
| 15/Mar/23 | Kidney |
| 16/Mar/23 | Suprarenal gland & Ureter |
| 17/Mar/23 | Sacrum, Bony Pelvis |
| 20/Mar/23 | Joints of pelvis, Pelvic diaphragm |
| 21/Mar/23 | Urinary bladder + Urethra |
| 22/Mar/23 | Revision |
| **24/Mar/23** | **SUBSTAGE 3** |
| 27/Mar/23 | Ovaries + Fallopian tubes |
| 28/Mar/23 | Uterus |
| 29/Mar/23 | Ductus deferens +seminal vesicle + Prostate |
| 30/Mar/23 | Rectum |
| 31/Mar/23 | Perineum (boundaries and anal region) |
| 3/Apr/23 | Deep and superficial perineal spaces |
| 4/Apr/23 | Pudendal canal+ nerve and vessels |
| 5/Apr/23 | Anal Canal |
| 6/Apr/23 | Vessels of the pelvis |
| **7/Apr/23** | **SUBSTAGE 4** |
| 10/Apr/23 | Surface marking |
| 11/Apr/23 | Radiology |
| 12/Apr/23 | OSPE practice |
| 13/Apr/23 | OSPE practice |
| 14/Apr/23 | Revision |
| **17/Apr/23** | **FINAL STAGE (Written)** |
| **18/Apr/23** | **FINAL STAGE (Ospe + Viva)** |
| **19/Apr/23** | **FINAL STAGE (Ospe + Viva)** |

**2ND YEAR MBBS TEACHING SCHEDULE FOR HEAD AND NECK**

|  |  |
| --- | --- |
| **DATE** | **TOPIC** |
| 20/APR/23 | Skull (Norma Verticalis + Norma frontalis) Scalp |
| 21/APR/23 | Face (Muscles of facial expression)+ Face(Blood vessels) |
| 25/Apr/23 | Face nerve supply + Clinical |
| 26/Apr/23 | Lacrimal Apparatus +eyelids and palpabrae |
| 27/Apr/23 | Deep cervical fascia |
| 28/Apr/23 | Posterior triangle of neck |
| 2/May/23 | Anterior triangle of neck |
| 3/May/23 | Anterior triangle of neck |
| 4/May/23 | Revision |
| **5/May/23** | **1ST SUBSTAGE** |
| 8/May/23 | Cranial fossa |
| 9/May/23 | Cranial fossa |
| 10/May/23 | Meninges |
| 11/May/23 | Venous sinuses & pituitary gland |
| 12/May/23 | Orbital cavity and muscles |
| 15/May/23 | Ophthalmic nerve |
| 16/ May/23 | 3,4,6 cranial nerves |
| 17/May/23 | Vessels of the orbit |
| 18/ May/23 | Eyeball |
| 19/ May/23 | Revision |
| **22/ May/23** | **2ND SUBSTAGE** |
| 23/ May/23 | Norma lateralis |
| 24/ May/23 | Hyoid bone & Mandible |
| 25/ May/23 | Temporomandibular joint |
| 26/ May/23 | Temporal & infratemporal fossa, |
| 29/ May/23 | Mandibular nerve +Muscles of mastication |
| 30/ May/23 | Maxillary nerve + Pterygopalatine fossa Maxillary artery |
| 31/ May/23 | Maxillary nerve + Pterygopalatine fossa + Maxillary artery |
| 1/Jun/23 | Thyroid and parathyroid gland |
| 2/Jun/23 | Submandibular gland |
| 5/Jun/23 | Parotid gland |
| 6/Jun/23 | Revision |
| 7/Jun/23 | Revision |
| 8/Jun/23 | Norma occipitalis, Cervical vertebrae, Joints of neck |
| **9/Jun/23** | **3rd SUBSTAGE** |
| 12/Jun/23 | Muscles of prevertebral region, sub- occipital triangle and scalene muscles |
| 13/Jun/23 | Muscles of prevertebral region, sub-occipital triangle and scalene muscles |
| 14/Jun/23 | Cervical sympathetic trunk, cervical plexus, Dermatomes |
| 15/Jun/23 | Subclavian system and cervical part of esophagus and trachea |
| 17/ Jul/23 | Tongue, Oral cavity and hypoglossal nerve |
| 18/Jul/23 | Hard palate + soft palate |
| 19/Jul/23 | Soft palate |
| 20/Jul/23 | Revision |
| **21/Jul/23** | **4th SUBSTAGE** |
| 24/Jul/23 | Pharynx |
| 25/Jul/23 | Pharynx |
| 26/Jul/23 | 9,10,11 cranial nerves |
| 27/Jul/23 | Nose |
| 31/Jul/23 | Nose + paranasal sinuses |
| 1/Aug/23 | Larynx |
| 2/Aug/23 | Larynx |
| 3/Aug/23 | Base of skull |
| 4/Aug/23 | External ear + middle ear cavity |
| 7/Aug/23 | Middle ear cavity + internal ear |
| 8/Aug/23 | 7th & 8th cranial nerve |
| 9/Aug/23 | Revision |
| 10/Aug/23 | Revision |
| **11/Aug/23** | **5th SUBSTAGE** |
| 15/Aug/23 | Radiology |
| 16/Aug/23 | Surface marking |
| 17/Aug/23 | Ospe practice |
| 18/Aug/23 | Revision |
| **21/Aug/23** | **FINAL STAGE (written)** |
| **22/Aug/23** | **FINAL STAGE (viva+ ospe)** |
| **23/Aug/23** | **FINAL STAGE(viva+ ospe)** |

**2ND YEAR MBBS TEACHING SCHEDULE OF BRAIN**

|  |  |
| --- | --- |
| **DATE** | **TOPIC** |
| - | Spinal Cord |
| 24/Aug/23 | Medulla |
| 25/Aug/23 | Medulla |
| 28/Aug/23 | Pons |
| 29/Aug/23 | 4th ventricle |
| 30/Aug/23 | Mid brain |
| 31/Aug/23 | Cerebellum |
| 1/Sep/23 | Cerebellum |
| 4/Sep/23 | Cerebral cortex(sulci &gyri) |
| 5/Sep/23 | Cerebral cortex (functional areas) |
| 6/Sep/23 | White matter |
| 7/Sep/23 | White matter |
| 8/Sep/23 | Basal ganglia |
| 11/Sep/23 | Thalamus |
| 12/Sep/23 | Hypothalamus |
| 13/Sep/23 | 3rd Ventricle, Metathalamus, epithalamus, subthalamus |
| 14/Sep/23 | Revision |
| 15/Sep/23 | Revision |
| **18/Sep/23** | **1st substage** |
| 19/Sep/23 | Lateral ventricle, CSF, cisterns |
| 20/Sep/23 | Blood supply of brain |
| - | Limbic system & Reticular formation |
| 21/Sep/23 | Olfactory pathway |
| 25/Sep/23 | Visual pathways |
| 26/Sep/23 | Revision |
| 27/Sep/23 | Revision |
| **29/Sep/23** | **2nd Substage** |
| 2/Oct/23 | OSPE Practice |
| 3/Oct/23 | OSPE Practice |
| 4/Oct/23 | Revision |
| 5/Oct/23 | Revision |
| 6/Oct/23 | Revision |
| **9/Oct/23** | **FINAL STAGE (WRITTEN)** |
| **10/Oct/23** | **FINAL STAGE (OSPE+ VIVA)** |
| **11/Oct/23** | **FINAL STAGE (OSPE+ VIVA)** |
| 12/Oct/23 | Revision |
| 13/Oct/23 | Revision |

**2ND YEAR MBBS HISTOLOGY LECTURES SCHEDULE**

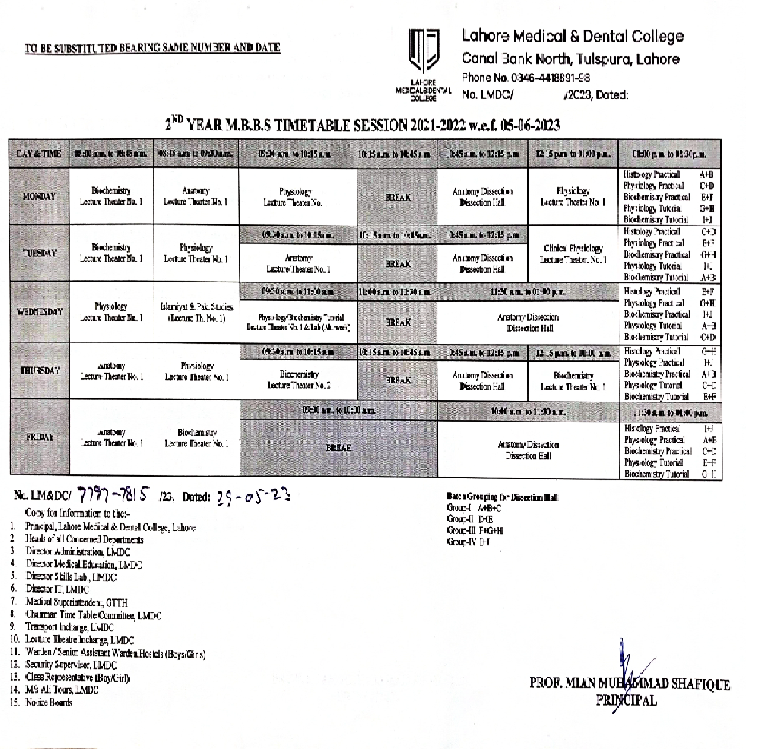
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| --- | --- |
| **DATE** | **TOPIC** |
| 30/Jan/23 | Tongue |
| 3/Feb/23 | Lip & Parotid gland |
| 10/Feb/23 | Submandibular & sublingual glands |
| 17/Feb/23 | Esophagus, General plan of GIT |
| 23/Feb/23 | Stomach |
| 24/Feb/23 | Stomach |
| 2/Mar/23 | Small intestine |
| 3/Mar/23 | Small intestine |
| 17/Mar/23 | Colon & appendix |
| 24/Mar/23 | Rectum & anal canal |
| 30/Mar/23 | Liver |
| 31/Mar/23 | Liver |
| 7/Apr/23 | Pancreas & Gall bladder |
| **26**/**Apr/23** | **HISTO TEST 1** |
| 27/Apr/23 | Kidney |
| 28/Apr/23 | Kidney |
| 5/May/23 | Ureter, urinary bladder & urethra |
| 11/May/23 | Testes |
| 12/May/23 | Testes, Epididymis |
| 19/May/23 | Vas deferens, Seminal vesicle & Prostate |
| 26/May/23 | Ovary |
| 2/Jun/23 | Ovary, Fallopian tube |
| 9/Jun/23 | Uterus |
| 15/Jun/23 | Uterus, Cervix and vagina |
| 20/Jul/23 | Eye 1 |
| 21/Jul/23 | Eye 2 |
| 25/Jul/23 | Ear 1 |
| 27/Jul/23 | Ear 2 |
| 4/Aug/23 | Adrenal gland |
| 11/Aug/23 | Thyroid, parathyroid & pineal glands |
| 18/Aug/23 | Pituitary gland |
| 25/Aug/23 | Spinal cord & cerebellum |
| 28/Aug/23 | Cerebrum |
| **22**/**Sep/23** | **HISTO TEST 2** |

**2ND YEAR MBBS EMBRYOLOGY LECTURES SCHEDULE**

|  |  |
| --- | --- |
| **DATE** | **TOPIC** |
| 31/Jan/23 | RESPIRATORY SYSTEM |
| 2/Feb/23 | RESPIRATORY SYSTEM |
| 6/Feb/23 | RESPIRATORY SYSTEM/ BODY CAVITIES |
| 7/Feb/23 | BODY CAVITIES |
| 9/Feb/23 | BODY CAVITIES |
| 13/Feb/23 | CVS |
| 14/Feb/23 | CVS |
| 16feb/23 | CVS |
| 20/Feb/23 | CVS |
| 21/Feb/23 | CVS |
| 27/Feb/23 | CVS |
| 28/Feb/23 | CVS |
| 13/Mar/23 | CVS |
| 14/Mar/23 | CVS |
| 16/Mar/23 | GIT |
| 20/Mar/23 | GIT |
| 21/Mar/23 | GIT |
| 27/Mar/23 | GIT |
| 28/Mar/23 | GIT |
| **29/Mar/23** | **EMBRYO TEST 1** |
| 3/Apr/23 | GIT |
| 4/Apr/23 | GIT |
| 6/Apr/23 | GIT |
| 10/Apr/23 | UROGENITAL |
| 11/Apr/23 | UROGENITAL |
| 13/Apr/23 | UROGENITAL |
| 14/Apr/23 | UROGENITAL |
| 20/Apr/23 | UROGENITAL |
| 21/Apr/23 | UROGENITAL |
| 25/Apr/23 | HEAD AND NECK |
| 2/May/23 | HEAD AND NECK |
| 4/May/23 | HEAD AND NECK |
| 8/May/23 | HEAD AND NECK |
| 9/May/23 | HEAD AND NECK |
| 15/May/23 | HEAD AND NECK |
| 16/May/23 | HEAD AND NECK |
| 18/May/23 | HEAD AND NECK |
| 22/May/23 | HEAD AND NECK |
| 23/May/23 | HEAD AND NECK |
| 25/May/23 | SPECIAL SENSES |
| 29/May/23 | SPECIAL SENSES |
| 30/May/23 | SPECIAL SENSES |
| **31/May/23** | **EMBRYO TEST 2** |
| 1/Jun/23 | SPECIAL SENSES |
| 5/Jun/23 | CNS |
| 6/Jun/23 | CNS |
| 8/Jun/23 | CNS |
| 12/Jun/23 | CNS |
| 13/Jun/23 | CNS |
| 17/Jul/23 | CNS |
| 18/Jul/23 | CNS |
| **30/Aug/23** | **EMBRYO TEST 3** |

**2ND YEAR MBBS HISTOLOGY PRACTICAL SCHEDULE**

|  |  |
| --- | --- |
| **DATE** | **TOPIC** |
| 30 jan-3Feb/23 | Tongue |
| 6-10 Feb/23 | Lip and parotid gland |
| 13-17 Feb23 | Submandibular and sublingual gland |
| 20-24 Feb/23 | Esophagus |
| 27 feb-3March/23 | Stomach |
| 13-17 March/23 | Small intestine |
| 20-24 March/23 | Colon and Appendix |
| 27-31March/23 | Rectum and anal canal |
| 3-7April/23 | Liver and Gall bladder |
| 10-14 April/23 | Pancreas |
| 17-21 April/23 | Revision |
| **25-28 April/23** | **OSPE TEST** |
| 2-5 May /23 | Kidney |
| 8-12 May /23 | Ureter, urinary bladder , urethra |
| 15-19 May /23 | Testes, Epididymis |
| 22-26 May /23 | Vas deferens, Seminal vesicle |
| 29 May-2 June/23 | Prostate and fallopian tubes |
| 5-9 June/23 | Ovary |
| 12-15 June/23 | Uterus |
| 17-21 July/23 | Cervix and Vagina |
| 24-27 July /23 | Cornea, Retina |
| 31 July -4 Aug/23 | Ear |
| 7-11 Aug/23 | Adrenal Gland |
| 15-18 Aug/23 | Thyroid, Parathyroid And Pineal Gland |
| 21-25 Aug/23 | Pituitary Gland |
| 28 Aug – 1 Sept/23 | Spinal Cord And Cerebellum |
| 4-8 Sept/23 | Cerebrum |
| 11-15sept/23 | Revision |
| 18-22 Sept/23 | Revision |
| **25-29 Sept/23** | **Ospe Test** |
| 2-6 October /23 | Revision |
| 9-13 October/23 | Revision |



**COUNSELLING**

**PHYCHOSOCIAL COUNSELLING: PROF. DR. IFFAT BADAR**

**CAREER GUIDANCE : PROF. DR. ARUNA BASHIR**