

**DETAILED SYLLABUS FOR THE POST OF ASSISTANT PROFESSOR
IN ANATOMY IN MEDICAL EDUCATION - DIRECT RECRUITMENT**

(Cat.No: 388/2023)

MODULE - 1

GENERAL ANATOMY (10 Marks)

- Modern concept of cell structure and its components, cell junctions, staining of cells.
- Microscopic Anatomy including ultrastructure of basic tissues of human body.
 - Epithelium: General features, classification, Structure of various types of epithelium with functional correlation.
 - Connective tissue: General features, classification, basic components – cells & fibres, different forms of connective tissue staining characteristics.
 - Cartilage: General features, structure & different types, staining characteristics.
 - Bone: General features, components – cells and matrix, classification, nutrition, ossification & growth.
 - Muscular tissue: Structure of different types of muscular tissues with functional correlation.
 - Vascular tissue: Structure of blood vessels with functional correlation.
 - Lymphatic tissue: Microscopic structure of lymph node, spleen, thymus & tonsil.
 - Nervous tissue: Structure of a neuron & its types, neuroganglia - structure, function & types, microscopic structure of peripheral nerve & optic nerve, sensory & autonomic ganglia.
 - Skin & its appendages
- Joints- General classification, structure of synovial joint, types of synovial joint & movements.

MODULE - 2(a)

GENERAL EMBRYOLOGY (10 marks)

- Oogenesis, Ovarian cycle & menstrual cycle.
- Spermatogenesis
- Fertilization, implantation & its applied Anatomy.
- Bilaminar&trilaminar germ discs, intra embryonic mesoderm, folding of embryo.
- Placenta- development & anomalies, foetal membranes, umbilical cord.
- Embryonic & foetal periods of development, teratogenesis.
- Twinning & multiple pregnancy.
- Determination of age of live foetus.
- Prenatal diagnosis of foetal diseases & malformations, foetal therapies.
- Artificial reproductive techniques.

MODULE - 2(b)

GENETICS & MOLECULAR BIOLOGY (5 marks)

- Structure of a gene, DNA, RNA, chromosomes, karyotyping, Lyon hypothesis & sex chromatin.
- Chromosomal Anomalies - Structural & numerical chromosomal aberrations with special emphasis to Klinefelter's, Down's & Turner's syndromes.
- Gene polymorphism, mutation, mosaicism, chimerism.
- Symbols used for chromosomal nomenclature.
- Pedegree and mode of inheritance of genetic disorders.
- Genetic counselling&Genetic engineering.
- Molecular control of development, growth, differentiation of embryo.

MODULE - 3

UPPER LIMB (10 marks)

- Bones, fascia, venous & lymphatic drainage, cutaneous innervation of upper limb.
- Pectoral & scapular regions-muscles, nerves, blood vessels & applied anatomy.
- Axilla – Boundaries & contents, blood vessels & nerves(brachial plexus), axillary lymph nodes & its clinical importance.
- Muscles, blood vessels & nerves of arm, forearm & hand..
- Cubital fossa, palmar spaces & clinical importance.
- All joints of upper limb- movements & muscles acting on it, applied anatomy.
- Dermatomes of upper limb

MODULE - 4

LOWER LIMB (10 MARKS)

- Bones, fascia, venous & lymphatic drainage, cutaneous innervation of lower limb.
- Structures in the gluteal region, femoral triangle & popliteal fossa & applied anatomy.
- Structures in all compartments of thigh and leg.
- Structures in all layers of sole of foot.
- Arches of foot and applied anatomy.
- Anatomy of posture & gait.
- All joints of lower limb- movements & muscles acting on it, applied anatomy.
- Dermatomes of lower limb.

MODULE - 5

THORAX (10marks)

- Bones, joints, muscles of thoracic wall.

- Inter costal space and its contents.
- Pleura - layers, reflections, recesses & clinical anatomy.
- Lungs - external features, relations, tracheo bronchial tree, broncho pulmonary segments & clinical anatomy.
- Microscopic anatomy of lung and trachea.
- Mediastinum, subdivisions & contents.
- Pericardium, Heart- chambers, valves, blood supply & applied anatomy, development of heart and its anomalies.
- Arch of Aorta, SVC, IVC, thoracic part of oesophagus, thoracic duct, azygos system of veins.
- Development of major blood vessels from aortic arches and their associated anomalies.
- Radiology & surface marking of heart and lung.
- Autonomic nerve plexus of thorax.

MODULE - 6(a)

ABDOMEN & PELVIS (15 marks)

- Anterior abdominal wall- muscles, blood vessels and nerves.
- Incisions on anterior abdominal wall, Rectus sheath and contents.
- Inguinal canal, protective mechanism & applied anatomy-inguinal hernia.
- Development and descent of testis, gross & microscopic structure of testis, epididymis, spermatic cord-coverings and contents.
- Peritoneum-reflections & applied anatomy.
- Development of GIT- Rotation of midgut& its associated anomalies.
- Stomach, Duodenum & other parts of small intestine-gross & microscopic anatomy.

- Gross and microscopic anatomy of liver, pancreas, spleen & extra hepatic biliary apparatus.
- Development & applied anatomy of portal vein-portocaval anastomosis.
- Abdominal aorta & its branches.
- Inferior vena cava-tributaries & developments.
- Diaphragm-structure, major & minor openings, development & associated anomalies.
- Large intestine & appendix including microscopic anatomy & clinical anatomy.
- Rectum & anal canal - with special emphasis to internal features and applied anatomy.
- Uterus, ovary, fallopian tube-development, gross & microscopic anatomy.
- Pelvic diaphragm & supports of uterus
- Prostate, kidney, urinary bladder & ureter, supra renal glands-gross & microscopic anatomy.
- Development of urogenital system and associated anomalies.
- Bony pelvis, sacrum, lumbar vertebrae.
- Nerves & vessels of male and female pelvis.
- Lumbar plexus, autonomic nerve plexus of abdomen and pelvis.
- Structures related to posterior abdominal wall.

MODULE - 6(b)

PERINEUM (5marks)

- Ischioanal fossa- boundaries contents & applied anatomy.
- Superficial & deep perineal pouches-contents & applied anatomy.
- Perineal body, Pudendal canal & contents, Pudendal

nerve

MODULE - 7

HEAD & NECK (15 marks)

- Bones & joints of skull, cervical vertebrae, cranial fossae and structures related.
- Scalp-layers, nerve supply, blood supply and applied anatomy.
- Face-muscles of facial expression, blood supply, nerve supply, dangerous area of face.
- Eye lid & lacrimal apparatus.
- Cervical fascia-layers, interfascial spaces and applied anatomy.
- Triangles of neck-boundaries and contents.
- Neuro vascular bundle of neck .
- Sub occipital triangle-boundaries and contents.
- Thyroid and pituitary gland - gross anatomy, relations, development and microscopical anatomy.
- Nerves and vasculature of orbit.
- Extraocular muscles & layers of eye ball (including M/C anatomy of cornea and retina).
- Structures of infra temporal fossa.
- Muscle of mastication, temporomandibular joint.
- Nasal cavity and paranasal air sinuses.
- Mouth, tongue, pharynx, larynx and ear (external, middle & internal ear).
- Cervical sympathetic ganglia & parasympathetic ganglia of head and neck.
- Cranial nerves - course, distribution and clinical anatomy.
- Development of pharyngeal arches & derivatives.

- Cranial meninges and dural venous sinuses.

MODULE - 8

BRAIN (10 marks)

- Spinal cord-external & internal features, coverings and blood supply.
- Medulla, pons, midbrain & cerebellum- external and internal features and applied anatomy.
- Ascending and descending tracts spinal cord and brain stem.
- Blood supply of brain and its clinical significance.
- Ventricles of brain, subarachnoid cistern, production & circulation of CSF.
- Sulci, gyri and functional area of cerebrum.
- White matter of cerebrum, classification with special emphasis to corpus callosum & internal capsule.
- Basal nuclei, optic pathway, thalamus, development of brain and functional column.
- Microscopic anatomy of cerebrum, cerebellum and spinal cord.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.