

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER
SYLLABUS FOR SCREENING TEST FOR THE POST OF
ASSISTANT PROFESSOR (Broad Speciality) ANATOMY
MEDICAL EDUCATION DEPARTMENT

Unit –I

General Anatomy

Anatomical Terminology - Anatomical position, Terms of Position & movement.

Skin & Fascia – Different types of skin, Dermatomes in body, Skin appendages & Skin Incisions. Superficial fascia, Deep fascia & its modifications.

Muscle – Classification of muscles, Differentiation between Tendons & aponeurosis, Shunt & Spurt muscle.

Nervous System – Components of Central, Peripheral & Autonomic nervous system, Neurons & Neuroglia, Typical Spinal nerve & Synapse, Sympathetic & Spinal Ganglia.

Bones & Joints – Classification & Ossification of Bones, Various types of cartilage, Classification of Joints.

Glands – Exocrine & Endocrine glands- classification & function.

Vascular & Lymphatic system – General features of arteries, Veins, lymphatics, portal system, arterial anastomoses. Define Thrombosis, Infarction & Aneurysm.

Unit- II

Osteology – Structure, attachment, relations, ossification, age changes & blood supply of all bones & cartilages.

Unit- III

Myology – Attachment, action, nerve supply & vascular supply, relation of important muscles of Upper limb, Lower limb, Thorax, Abdomen, Pelvis, Perineum and Head & Neck.

Unit –IV

Arthology – Structure, relation, movements, vascular, nerve supply & applied anatomy of all joints of the body.

Unit –V

Cardio-Vascular – Pericardium, External & Internal features of all the chambers of Heart, Blood supply, Nerve Supply, Fibrous Skeleton & Anatomical Basis of Ischemic Heart Disease.

Unit- VI

Lymphatic System- Immune System and the cell types involved in defence mechanisms of the body. Gross features, Cyto architecture, functions, development and histogenesis of various primary and secondary lymphoid organs.

Biological and clinical significance of the major histocompatibility complex of man including its role in transplantation, disease susceptibility/resistance and genetic control of the immune response.

Lymphatic Drainage of all parts & organs of the body. Position & Relations of various groups of lymph-nodes. Major lymph vessels of the body.

Unit- VII

Neuroanatomy– Brain and its environment including Meninges, CSF and Dural Venous Sinuses. Development of nervous system. Neuron and Neuroglia, Somatic Sensory system, Olfactory and Optic pathways, Cochleovestibular and Gustatory pathways, Motor pathways, Central autonomic pathways, Hypothalamo- hypophyseal system, Limbic system, Basal ganglia, Reticular system, Cross-sectional anatomy of the Brain, Brainstem and Spinal cord. Detailed structure of CNS and its applied anatomy. Blood Supply of Brain and Spinal Cord.

Unit- VIII

Special Senses – Anatomy of peripheral receptors of Taste, Smell, Vision, Hearing & Touch and their central connections, pathways, functions & applied aspect.

Unit- IX

Splanchnology – Gross Anatomy of all viscera & organs including – Respiratory, Digestive, Urogenital, lymphoid organs, Endocrine & Exocrine glands.

Unit-X

Embryology – General embryology: Gametogenesis, Uterine and Ovarian cycle, Fertilization, Implantation and Placenta. Early human embryonic development.

Systemic embryology: Development of organ systems and associated common congenital abnormalities with teratogenesis.

Physiological Correlations of congenital abnormalities.

Unit-XI

Genetics- Human Chromosomes- Structure, number and classification, methods of chromosome preparation, banding patterns. Chromosome abnormalities, Autosomal and Sex chromosomal abnormalities & syndromes, Molecular and Cytogenetics.

Single Gene Pattern inheritance- Autosomal and Sex Chromosomal pattern of inheritance, Intermediate pattern and multiple alleles, Mutations, Non-mendelian inheritance. Mitochondrial inheritance, Genome imprinting, parental disomy.

Multifactorial pattern of Inheritance- Teratology, structure gene, Molecular Screening, Cancer genetics, haematological malignancies, Pharmacogenetics.

Reproduction genetics- Male and Female infertility, Abortuses, Assisted reproduction, Preimplantation genetics, Prenatal diagnosis, Genetic counselling, ethics of genetics, principles of gene therapy and its applied.

Unit- XII

Microanatomy – Cell Biology- Cytoplasm- Cytoplasmic matrix, Cell membrane, Cell Organelles, Cytoskeleton, Cell Inclusions, Cilia and flagella.

Nucleus- Nuclear envelope, nuclear matrix, DNA and other components of chromatin, protein synthesis, nucleolus, nuclear changes indicating cell death.

Cell cycle- Mitosis, meiosis, cell renewal, cellular differentiation and proliferation.

Microscopic structure of Body- Types & parts, Study of histological features of all the cells, tissues & organs of the body.

Principles of light, transmission and scanning, electron, fluorescent, confocal and virtual microscopy.

Systems/Organs of Body- Cellular organization, light and electron microscopic features, structure- function correlations and cellular organization.

Unit- XIII

Applied Anatomy- Application of Knowledge of structural, development, neuroanatomy to comprehend deviations from normal.

Clinical correlations of structure and functions of human body. Anatomical basis and explanations for clinical problems.

Unit- XIV

Functional Anatomy– Relationship of structures & functions in respect to various Tissues & Organs of the body.

Unit- XV

Living Anatomy– Surface marking of all regions of the body. Interpretation of normal radiographs of the body including Barium studies, cholecystography, pyelography, salphingography, normal CT scan, MRI and Ultrasound.

Unit- XVI

Sectional Anatomy – Cross/Sagittal/Coronal Sections of Brain, Head & neck, Thorax, Abdomen, Pelvis & Limbs to understand inter-relation of organs & interpretation with CT & MRI.

Unit- XVII

Recent Advances- Recent advances in medical sciences which facilitate comprehension of structure function, correlations and applications in Clinical problem solving.

Collection, maintenance and application of stem cells, cryobanking and principles of organ donation from recently dead bodies.

Unit- XVIII

Radio Diagnosis - Identification of Plain X-rays, special radiographic procedures and Arteriography.

Unit-XIX

Embalming– Basic knowledge of types of embalming and types of embalming fluids. Embalming in special circumstances like burns, drowning and postmortem bodies etc.

Unit-XX

Forensic Medicine and Anthropology:

Identification of human bones from their remains and determination of sex, age and height for medicolegal application of Anatomy.

Different anthropological traits, identification and use of anthropological instruments.

Pelvimetry and Cephalometry.

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Pattern of Question Papers:

- 1. Objective Type Paper**
- 2. Maximum Marks: 180**
- 3. Number of Questions: 180**
- 4. Duration of Paper : Three Hours**
- 5. All Questions carry equal marks**
- 6. Medium of Screening Test: English**
- 7. There will be Negative Marking**
(1/3 part of the mark(s) of each question will be deducted for each wrong answer)