
Syllabus for PhD entrance Examination: Medical Anatomy

A) GENERAL ANATOMY

I) General Osteology

Definition, Nutrition & Morphological Classification, Distribution and Functions of bone Appendicular, Axial.
Diaphysis, Metaphysis, Epiphysis, Types of epiphysis
Primary centres, Secondary centers, Law of ossification, Epiphyseal plate, Blood supply of long bone
CARTILAGE :Definition, Types, structure, Distribution, Nutrition

II) General Arthrology

Classification, Synarthrosis, Amphiarthrosis, Diarthrosis.
Cartilaginous. Primary, Secondary
Synovial - Axis of movement, Structure of typical synovial joints Classification of synovial joints
Simple, Compound ,Complex joints, Blood supply & nerve supply.

III) General Myology

Definition, types: Origin, Insertion, Morphological classification Actions of muscles, nerve supply
Functional classification, Prime movers, Fixators, Antagonists, Synergists
BURSA, Structure, Functions,types:
LIGAMENTS, Types & functions,Sprains

IV) Integument

- a) Skin - Types:Thin, Thick, hairy, Functions, innervation Structure : Epidermis, Dermis, Appendages
- b) SUPERFICIAL FASCIA - Distribution of fat, functions
- c) DEEP FASCIA - Features, Modifications, Functions

VI) General Angiology

Arteries: Muscular, Elastic; Arterioles; Capillaries: Sinusoids, Veins - Anastomosis: End arterial; Vasa vasorum,
nerve supply of blood vessels
Lymphatic system,Lymph vessels, Central lymphoid tissue, Peripheral lymphoid organs, Circulating lymphocytes -
T and B lymphocytes

VII) General Neurology

Structure of nervous tissue,
Neurons: Synapses :Structural – type, Functional types
Classification of neurons : According to polarity and According to relative lengths of axons and dendrites
Neuroglia: Nerves :Cranial – Spinal, Structure of typical spinal nerve
Autonomic nervous system: Sympathetic :Sympathetic ganglia, postganglionic fibres
Parasympathetic :Cranial outflow, sacral outflow

B) REGIONAL ANATOMY

Regional Anatomy, Arthrology, Osteology, Neurology, Angiology and common fractures of

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|----------------|-----------------------|
| I) Upper Limb | IV) Thorax |
| II) Lower limb | V) Pelvis & perineum |
| III) Abdomen | VI) Head, Neck & Face |

C) MICROANATOMY

i) **Microscope** : Light microscope: parts, magnification, resolution, Electron microscope, Micro techniques, H and E staining

ii) **Cytology**

iii) **Epithelial** Definition, Classification, Structure of various types & subtypes of epithelia

Surface modifications, Cilia; Microvilli; Stereocilia; Cell junction and junctional complexes;

Glands, Classification; Unicellular and Multicellular; Exocrine, Endocrine, Amphicrine. Exocrine: Simple, Compound; Apocrine, Merocrine, Holocrine; Tubular, alveolar, tubuloalveolar; Serous; Mucous; Mixed

iv) Connective tissue, classification, structure, fibres, ground substance, loose areolar tissue, adipose tissue

v) **Bone & Cartilage** Compact, Cancellous, Developing bone; ossification, Woven, lamellar bone

Cartilage, Classification, types, Perichondrium, functions

vi) **Muscle**

vii) **Nervous** Neurons, types; Neuroglia, types; Myelinated nerve fibre *LS*; Non-myelinated nerve fibre; Peripheral nerve ; Nodes of Ranvier; Synapses;

viii) **Vessels**

Large sized artery Medium sized artery, Arteriole; Capillary, Sinusoid; Medium sized vein;

Lymphoid tissue

T cells, B cells; Mucosa Associated Lymphoid Tissue; Humoral immunity, Cell mediated immunity; Lymph node *section*; Thymus, Spleen, Tonsil

D) Neuroanatomy:

i) The Forebrain

ii) Brainstem

iii) Cerebellum

iv) Blood supply of the brain

v) Spinal coed

vi) Peripheral nervous system

vii) Cranial nerves

viii) Spinal nerves

ix) Autonomic nervous system

E) Genetics

i) Human chromosomes and chromosomal anomalies

ii) Single gene pattern inheritance

iii) Multifactorial pattern of inheritance

iv) Reproduction genetics