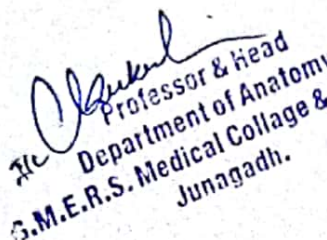


# Syllabus Anatomy 1<sup>st</sup> M.B.B.S

(Competency based Undergraduate curriculum for the  
Indian Medical Graduate, 2018. Vol. 1; page no.41-81)

COMPETENCY NO.	TOPICS & SUBTOPICS
	<b>GENERAL ANATOMY</b>
AN1.1	Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movement in our body
AN1.2	Describe composition of bone and bone marrow
AN2.1	Describe parts, blood and nerve supply of a long bone
AN2.2	Enumerate laws of ossification
AN2.3	Enumerate special features of a sesamoid bone
AN2.4	Describe various types of cartilage with its structure & distribution in body
AN2.5	Describe various joints with subtypes and examples
AN2.6	Explain the concept of nerve supply of joints & Hilton's law
AN3.1	Classify muscle tissue according to structure & action
AN3.2	Enumerate parts of skeletal muscle and differentiate between tendons and aponeuroses with examples
AN3.3	Explain Shunt and spurt muscles
AN4.1	Describe different types of skin & dermatomes in body
AN4.2	Describe structure & function of skin with its appendages
AN4.3	Describe superficial fascia along with fat distribution in body
AN4.4	Describe modifications of deep fascia with its functions
AN4.5	Explain principles of skin incisions
AN5.1	Differentiate between blood vascular and lymphatic system
AN5.2	Differentiate between pulmonary and systemic circulation
AN5.3	List general differences between arteries & veins
AN5.4	Explain functional difference between elastic, muscular arteries and arterioles
AN5.5	Describe portal system giving examples
AN5.6	Describe the concept of anastomoses and collateral circulation with significance of end-arteries
AN5.7	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses
AN5.8	Define thrombosis, infarction & aneurysm
AN6.1	List the components and functions of the lymphatic system
AN6.2	Describe structure of lymph capillaries & mechanism of lymph circulation
AN6.3	Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system
AN7.1	Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems
AN7.2	List components of nervous tissue and their functions
AN7.3	Describe parts of a neuron and classify them based on number of neurites, size & function
AN7.4	Describe structure of a typical spinal nerve
AN7.5	Describe principles of sensory and motor innervation of muscles
AN7.6	Describe concept of loss of innervation of a muscle with its applied anatomy
AN7.7	Describe various type of synapse
AN7.8	Describe differences between sympathetic and spinal ganglia

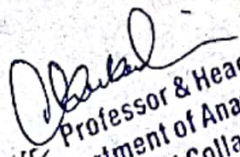
  
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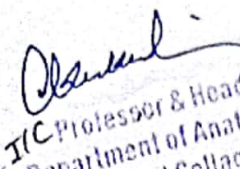


	UPPER LIMB
AN8.1	Identify the given bone, its side, important features & keep it in anatomical position
AN8.2	Identify & describe joints formed by the given bone
AN8.3	Enumerate peculiarities of clavicle
AN8.4	Demonstrate important muscle attachment on the given bone
AN8.5	Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform
AN8.6	Describe scaphoid fracture and explain the anatomical basis of avascular necrosis
AN9.1	Describe attachment, nerve supply & action of pectoralis major and pectoralis minor
AN9.2	Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast
AN9.3	Describe development of breast
AN10.1	Identify & describe boundaries and contents of axilla
AN10.2	Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein
AN10.3	Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus
AN10.4	Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage
AN10.5	Explain variations in formation of brachial plexus
AN10.6	Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis
AN10.7	Explain anatomical basis of enlarged axillary lymph nodes
AN10.8	Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi
AN10.9	Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation
AN10.10	Describe and identify the deltoid and rotator cuff muscles
AN10.11	Describe & demonstrate attachment of serratus anterior with its action
AN10.12	Describe and demonstrate shoulder joint for- type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy
AN10.13	Explain anatomical basis of Injury to axillary nerve during intramuscular injections
AN11.1	Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii
AN11.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm
AN11.3	Describe the anatomical basis of Venepuncture of cubital veins
AN11.4	Describe the anatomical basis of Saturday night paralysis
AN11.5	Identify & describe boundaries and contents of cubital fossa
AN11.6	Describe the anastomosis around the elbow joint
AN12.1	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions
AN12.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm
AN12.3	Identify & describe flexor retinaculum with its attachments
AN12.4	Explain anatomical basis of carpal tunnel syndrome
AN12.5	Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved
AN12.6	Describe & demonstrate movements of thumb and muscles involved
AN12.7	Identify & describe course and branches of important blood vessels and nerves in hand
AN12.8	Describe anatomical basis of Claw hand
AN12.9	Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths
AN12.10	Explain infection of fascial spaces of palm
AN12.11	Identify, describe and demonstrate important muscle groups of dorsal forearm with

  
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	attachments, nerve supply and actions
AN12.12	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm
AN12.13	Describe the anatomical basis of Wrist drop
AN12.14	Identify & describe compartments deep to extensor retinaculum
AN12.15	Identify & describe extensor expansion formation
AN13.1	Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage
AN13.2	Describe dermatomes of upper limb
AN13.3	Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint
AN13.4	Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint
AN13.5	Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand
AN13.6	Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, inferior angle of the scapula
AN13.7	Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis
AN13.8	Describe development of upper limb
<b>LOWER LIMB</b>	
AN14.1	Identify the given bone, its side, important features & keep it in anatomical position
AN14.2	Identify & describe joints formed by the given bone
AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia
AN14.4	Identify and name various bones in the articulated foot with individual muscle attachment
AN15.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh
AN15.2	Describe and demonstrate major muscles with their attachment, nerve supply and actions
AN15.3	Describe and demonstrate boundaries, floor, roof and contents of femoral triangle
AN15.4	Explain anatomical basis of Psoas abscess & Femoral hernia
AN15.5	Describe and demonstrate adductor canal with its content
AN16.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region
AN16.2	Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections
AN16.3	Explain the anatomical basis of Trendelenburg sign
AN16.4	Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions
AN16.5	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh
AN16.6	Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa
AN17.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint
AN17.2	Describe anatomical basis of complications of fracture neck of femur
AN17.3	Describe dislocation of hip joint and surgical hip replacement
AN18.1	Describe and demonstrate major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions
AN18.2	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of

  
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AN18.3	important nerves and vessels of anterior compartment of leg
AN18.4	Explain the anatomical basis of foot drop
AN18.5	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint
AN18.6	Explain the anatomical basis of locking and unlocking of the knee joint
AN18.7	Describe knee joint injuries with its applied anatomy
AN19.1	Explain anatomical basis of Osteoarthritis
AN19.2	Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions
AN19.3	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg
AN19.4	Explain the concept of "Peripheral heart"
AN19.5	Explain the anatomical basis of rupture of calcaneal tendon
AN19.6	Describe factors maintaining importance arches of the foot with its importance
AN19.7	Explain the anatomical basis of Flat foot & Club foot
AN20.1	Explain the anatomical basis of Metatarsalgia & Plantar fasciitis
AN20.2	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint
AN20.3	Describe the subtalar and transverse tarsal joints
AN20.4	Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb
AN20.5	Explain anatomical basis of enlarged inguinal lymph nodes
AN20.6	Explain anatomical basis of varicose veins and deep vein thrombosis
AN20.7	Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb
AN20.8	Identify & demonstrate important bony landmarks of lower limb: -Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular
AN20.9	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment
AN20.10	Identify & demonstrate Palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial). Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins
AN21.1	Describe basic concept of development of lower limb
<b>THORAX</b>	
AN21.2	Identify and describe the salient features of sternum, typical rib, 1 <sup>st</sup> rib and typical thoracic vertebra
AN21.3	Identify & describe the features of 2 <sup>nd</sup> , 11 <sup>th</sup> and 12 <sup>th</sup> ribs, 1 <sup>st</sup> , 11 <sup>th</sup> and 12 <sup>th</sup> thoracic vertebrae
AN21.4	Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet
AN21.5	Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles
AN21.6	Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve
AN21.7	Mention origin, course and branches/ tributaries of: 1) anterior & posterior intercostal vessels 2) internal thoracic vessels
	Mention the origin, course, relations and branches of 1) atypical intercostal nerve 2) superior intercostal artery, subcostal artery

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AN21.8	Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints
AN21.9	Describe & demonstrate mechanics and types of respiration
AN21.10	Describe costochondral and interchondral joints
AN21.11	Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum
AN22.1	Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium
AN22.2	Describe & demonstrate external and internal features of each chamber of heart
AN22.3	Describe & demonstrate origin, course and branches of coronary arteries
AN22.4	Describe anatomical basis of ischaemic heart disease
AN22.5	Describe & demonstrate the formation, course, tributaries and termination of coronary sinus
AN22.6	Describe the fibrous skeleton of heart
AN22.7	Mention the parts, position and arterial supply of the conducting system of heart
AN23.1	Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus
AN23.2	Describe & demonstrate the extent, relations tributaries of thoracic duct and enumerate its applied anatomy
AN23.3	Describe & demonstrate origin, course, relations, tributaries and termination of superior venacava, azygos, hemiazygos and accessory hemiazygos veins
AN23.4	Mention the extent, branches and relations of arch of aorta & descending thoracic aorta
AN23.5	Identify & Mention the location and extent of thoracic sympathetic chain
AN23.6	Describe the splanchnic nerves
AN23.7	Mention the extent, relations and applied anatomy of lymphatic duct
AN24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy
AN24.2	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate
AN24.3	Describe a bronchopulmonary segment
AN24.4	Identify phrenic nerve & describe its formation & distribution
AN24.5	Mention the blood supply, lymphatic drainage and nerve supply of lungs
AN24.6	Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea
AN25.1	Identify, draw and label a slide of trachea and lung
AN25.2	Describe development of pleura, lung & heart
AN25.3	Describe fetal circulation and changes occurring at birth
AN25.4	Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula
AN25.5	Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta
AN25.6	Mention development of aortic arch arteries, SVC, IVC and coronary sinus
AN25.7	Identify structures seen on a plain x-ray chest (PA view)
AN25.8	Identify and describe in brief a barium swallow
AN25.9	Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart
<b>HEAD &amp; NECK</b>	
AN26.1	Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull
AN26.2	Describe the features of norma frontalis, verticalis, occipitalis, lateralis and basalis
AN26.3	Describe cranial cavity, its subdivisions, foramina and structures passing through them
AN26.4	Describe morphological features of mandible
AN26.5	Describe features of typical and atypical cervical vertebrae (atlas and axis)
AN26.6	Explain the concept of bones that ossify in membrane

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AN26.7	Describe the features of the 7 <sup>th</sup> cervical vertebra
AN27.1	Describe the layers of scalp, its blood supply, its nerve supply and surgical importance
AN27.2	Describe emissary veins with its role in spread of infection from extracranial route to intracranial venous sinuses
AN28.1	Describe & demonstrate muscles of facial expression and their nerve supply
AN28.2	Describe sensory innervation of face
AN28.3	Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels
AN28.4	Describe & demonstrate branches of facial nerve with distribution
AN28.5	Describe cervical lymph nodes and lymphatic drainage of head, face and neck
AN28.6	Identify superficial muscles of face, their nerve supply and actions
AN28.7	Explain the anatomical basis of facial nerve palsy
AN28.8	Explain surgical importance of deep facial vein
AN28.9	Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance
AN28.10	Explain the anatomical basis of Frey's syndrome
AN29.1	Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid
AN29.2	Explain anatomical basis of Erb's & Klumpke's palsy
AN29.3	Explain anatomical basis of wry neck
AN29.4	Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2) scalenus anterior, 3) scalenus medius & 4) levator scapulae
AN30.1	Describe the cranial fossae & identify related structures
AN30.2	Describe & identify major foramina with structures passing through them
AN30.3	Describe & identify dural folds & dural venous sinuses
AN30.4	Describe clinical importance of dural venous sinuses
AN30.5	Explain effect of pituitary tumours on visual pathway
AN31.1	Describe & identify extra ocular muscles of eyeball
AN31.2	Describe & demonstrate nerves and vessels in the orbit
AN31.3	Describe anatomical basis of Horner's syndrome
AN31.4	Enumerate components of lacrimal apparatus
AN31.5	Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus
AN32.1	Describe boundaries and subdivisions of anterior triangle
AN32.2	Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles
AN33.1	Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae
AN33.2	Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication
AN33.3	Describe & demonstrate articulating surface, type & movements of temporomandibular joint
AN33.4	Explain the clinical significance of pterygoid venous plexus
AN33.5	Describe the features of dislocation of temporomandibular joint
AN34.1	Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion
AN34.2	Describe the basis of formation of submandibular stones
AN35.1	Describe the parts, extent, attachments, modifications of deep cervical fascia
AN35.2	Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland
AN35.3	Demonstrate & describe the origin, parts, course & branches subclavian artery
AN35.4	Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins
AN35.5	Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes
AN35.6	Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain

  
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AN35 7	Describe the course and branches of IX, X, XI & XII nerve in the neck
AN35 8	Describe the anatomically relevant clinical features of Thyroid swellings
AN35 9	Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib
AN35 10	Describe the fascial spaces of neck
AN36 1	Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate
AN36 2	Describe the components and functions of Waldeyer's lymphatic ring
AN36 3	Describe the boundaries and clinical significance of pyriform fossa
AN36 4	Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess
AN36 5	Describe the clinical significance of Killian's dehiscence
AN37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply
AN37 2	Describe location and functional anatomy of paranasal sinuses
AN37 3	Describe anatomical basis of sinusitis & maxillary sinus tumours
AN38 1	Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx
AN38 2	Describe the anatomical aspects of laryngitis
AN38 3	Describe anatomical basis of recurrent laryngeal nerve injury
AN39 1	Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue
AN39 2	Explain the anatomical basis of hypoglossal nerve palsy
AN40 1	Describe & identify the parts, blood supply and nerve supply of external ear
AN40 2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube
AN40 3	Describe the features of internal ear
AN40 4	Explain anatomical basis of otitis externa and otitis media
AN40 5	Explain anatomical basis of myringotomy
AN41.1	Describe & demonstrate parts and layers of eyeball
AN41 2	Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion
AN41 3	Describe the position, nerve supply and actions of intraocular muscles
AN42 1	Describe the contents of the vertebral canal
AN42.2	Describe & demonstrate the boundaries and contents of Suboccipital triangle
AN42.3	Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis
AN43 1	Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint
AN43.2	Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina
AN43 3	Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland
AN43.4	Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye
AN43 5	Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels
AN43 6	Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve
AN43.7	Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x- ray of paranasal sinuses

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AN43.8	Describe the anatomical route used for carotid angiogram and vertebral angiogram
AN43.9	Identify anatomical structures in carotid angiogram and vertebral angiogram
<b>ABDOMEN</b>	
AN44.1	Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen
AN44.2	Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall
AN44.3	Describe the formation of rectus sheath and its contents
AN44.4	Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.
AN44.5	Explain the anatomical basis of inguinal hernia.
AN44.6	Describe & demonstrate attachments of muscles of anterior abdominal wall
AN44.7	Enumerate common Abdominal incisions
AN45.1	Describe Thoracolumbar fascia
AN45.2	Describe & demonstrate Lumbar plexus for its root value, formation & branches
AN45.3	Mention the major subgroups of back muscles, nerve supply and action
AN46.1	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy
AN46.2	Describe parts of Epididymis
AN46.3	Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)
AN46.4	Explain the anatomical basis of Varicocele
AN46.5	Explain the anatomical basis of Phimosis & Circumcision
AN47.1	Describe & identify boundaries and recesses of Lesser & Greater sac
AN47.2	Name & identify various peritoneal folds & pouches with its explanation
AN47.3	Explain anatomical basis of Ascites & Peritonitis
AN47.4	Explain anatomical basis of Subphrenic abscess
AN47.5	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)
AN47.6	Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach
AN47.7	Mention the clinical importance of Calot's triangle
AN47.8	Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein
AN47.9	Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery
AN47.10	Enumerate the sites of portosystemic anastomoses
AN47.11	Explain the anatomic basis of hematemesis & caput medusae in portal hypertension
AN47.12	Describe important nerve plexuses of posterior abdominal wall
AN47.13	Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm
AN47.14	Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia
AN48.1	Describe & identify the muscles of Pelvic diaphragm
AN48.2	Describe & demonstrate the (position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera
AN48.3	Describe & demonstrate the origin, course, important relations and branches of internal iliac artery
AN48.4	Describe the branches of sacral plexus
AN48.5	Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation

  
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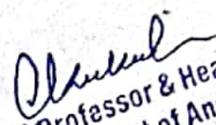


AN48.6	Describe the neurological basis of Automatic bladder
AN48.7	Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer
AN48.8	Mention the structures palpable during vaginal & rectal examination
AN49.1	Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)
AN49.2	Describe & identify Perineal body
AN49.3	Describe & demonstrate Perineal membrane in male & female
AN49.4	Describe & demonstrate boundaries, content & applied anatomy of Ischioanal fossa
AN49.5	Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure
AN50.1	Describe the curvatures of the vertebral column
AN50.2	Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis
AN50.3	Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)
AN50.4	Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida
AN51.1	Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)
AN51.2	Describe & identify the midsagittal section of male and female pelvis
<b>HISTOLOGY</b>	
AN52.1	Describe & identify the microanatomical features of Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland
AN52.2	Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & penis Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord
AN52.3	Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum
AN64.1	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum
AN65.1	Identify epithelium under the microscope & describe the various types that correlate to its function
AN65.2	Describe the ultrastructure of epithelium
AN66.1	Describe & identify various types of connective tissue with functional correlation
AN66.2	Describe the ultrastructure of connective tissue
AN67.1	Describe & identify various types of muscle under the microscope
AN67.2	Classify muscle and describe the structure-function correlation of the same
AN67.3	Describe the ultrastructure of muscular tissue
AN68.1	Describe & identify multipolar & unipolar neuron, ganglia, peripheral nerve
AN68.2	Describe the structure-function correlation of neuron
AN68.3	Describe the ultrastructure of nervous tissue
AN70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function
AN71.1	Identify bone under the microscope; classify various types and describe the structure-function correlation of the same
AN71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same
AN72.1	Identify the skin and its appendages under the microscope and correlate the structure with function

*[Signature]*  
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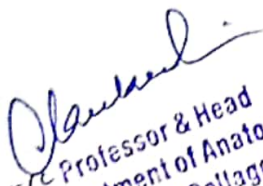


EMBRYOLOGY	
AN52.4	Describe the development of anterior abdominal wall
AN52.5	Describe the development and congenital anomalies of Diaphragm
AN52.6	Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut
AN52.7	Describe the development of Urinary system
AN52.8	Describe the development of male & female reproductive system
AN64.1	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum
AN64.2	Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum
AN64.3	Describe various types of open neural tube defects with its embryological basis
AN76.1	Describe the stages of human life
AN76.2	Explain the terms- phylogeny, ontogeny, trimester, viability
AN77.1	Describe the uterine changes occurring during the menstrual cycle
AN77.2	Describe the synchrony between the ovarian and menstrual cycles
AN77.3	Describe spermatogenesis and oogenesis along with diagrams
AN77.4	Describe the stages and consequences of fertilization
AN77.5	Enumerate and describe the anatomical principles underlying contraception
AN77.6	Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of "sex-ratio".
AN78.1	Describe cleavage and formation of blastocyst
AN78.2	Describe the development of trophoblast
AN78.3	Describe the process of implantation & common abnormal sites of implantation
AN78.4	Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate
AN78.5	Describe in brief abortion; decidual reaction, pregnancy test
AN79.1	Describe the formation & fate of the primitive streak
AN79.2	Describe formation & fate of notochord
AN79.3	Describe the process of neurulation
AN79.4	Describe the development of somites and intra-embryonic coelom
AN79.5	Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects
AN79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein
AN80.1	Describe formation, functions & fate of-chorion: amnion; yolk sac; allantois & deciduas
AN80.2	Describe formation & structure of umbilical cord
AN80.3	Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier
AN80.4	Describe embryological basis of twinning in monozygotic & dizygotic twins
AN80.5	Describe role of placental hormones in uterine growth & parturition
AN80.6	Explain embryological basis of estimation of fetal age.
AN80.7	Describe various types of umbilical cord attachments
AN81.1	Describe various methods of prenatal diagnosis
AN81.2	Describe indications, process and disadvantages of amniocentesis
AN81.3	Describe indications, process and disadvantages of chorion villus biopsy
NEUROANATOMY	
AN56.1	Describe & identify various layers of meninges with its extent & modifications
AN56.2	Describe circulation of CSF with its applied anatomy
AN57.1	Identify external features of spinal cord
AN57.2	Describe extent of spinal cord in child & adult with its clinical implication
AN57.3	Draw & label transverse section of spinal cord at mid-cervical & mid- thoracic level
AN57.4	Enumerate ascending & descending tracts at mid thoracic level of spinal cord
AN57.5	Describe anatomical basis of syringomyelia
AN58.1	Identify external features of medulla oblongata
AN58.2	Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2)

  
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	sensory decussation 3) ION
AN58.3	Enumerate cranial nerve nuclei in medulla oblongata with their functional group
AN58.4	Describe anatomical basis & effects of medial & lateral medullary syndrome
AN59.1	Identify external features of pons
AN59.2	Draw & label transverse section of pons at the upper and lower level
AN59.3	Enumerate cranial nerve nuclei in pons with their functional group
AN60.1	Describe & demonstrate external & internal features of cerebellum
AN60.2	Describe connections of cerebellar cortex and intracerebellar nuclei
AN60.3	Describe anatomical basis of cerebellar dysfunction
AN61.1	Identify external & internal features of midbrain
AN61.2	Describe internal features of midbrain at the level of superior & inferior colliculus
AN61.3	Describe anatomical basis & effects of Benedikt's and Weber's syndrome
AN62.1	Enumerate cranial nerve nuclei with its functional component
AN62.2	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere
AN62.3	Describe the white matter of cerebrum
AN62.4	Enumerate parts & major connections of basal ganglia & limbic lobe
AN62.5	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus
AN62.6	Describe & identify formation, branches & major areas of distribution of circle of Willis
AN63.1	Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle
AN63.2	Describe anatomical basis of congenital hydrocephalus
	<b>GENETICS</b>
AN73.1	Describe the structure of chromosomes with classification
AN73.2	Describe technique of karyotyping with its applications
AN73.3	Describe the Lyon's hypothesis
AN74.1	Describe the various modes of inheritance with examples
AN74.2	Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance
AN74.3	Describe multifactorial inheritance with examples
AN74.4	Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia
AN75.1	Describe the structural and numerical chromosomal aberrations
AN75.2	Explain the terms mosaics and chimeras with example
AN75.3	Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome
AN75.4	Describe genetic basis of variation: polymorphism and mutation
AN75.5	Describe the principles of genetic counselling

  
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# BHAKTA KAVI NARSINH MEHTA UNIVERSITY

## HUMAN ANATOMY

### Internal marks distribution

Theory		Practical	
Terminal exam	40	Terminal exam	40
Preliminary exam	40	Preliminary exam	40
Part ending theory exam/Assignments/Seminars	20	Part ending theory exam/Assignments/Seminars	20
Total	100	Total	100



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**BHAKTA KAVI NARSINH MEHTA UNIVERSITY**  
**FIRST MBBS HUMAN ANATOMY PAPER STYLE**  
**PAPER 1**

Time: 3 Hours

Total marks 100

**UPPER LIMB, HEAD & NECK, NEUROANATOMY, GENERAL HISTOLOGY  
& GENERAL EMBRYOLOGY, GENERAL ANATOMY, AETCOM**

**Instructions:**

- Write each section in separate answer sheet
- Start each question from new page
- Draw diagrams wherever necessary

**SECTION – I**

Q. 1 Give answer in **one/two** sentences:

**8 x 1 mark = 08**

- 1) HEAD & NECK
- 2) HEAD & NECK
- 3) HEAD & NECK
- 4) NEUROANATOMY
- 5) NEUROANATOMY
- 6) NEUROANATOMY
- 7) GENERAL HISTOLOGY
- 8) GENERAL HISTOLOGY

Q. 2 Long answer question (any one)

**1 x 12 marks = 12**

- 1) HEAD & NECK
- 2) HEAD & NECK

Q. 3 Write short notes on (any two)

**2 x 5 marks = 10**

- 1) HEAD & NECK
- 2) HEAD & NECK
- 3) HEAD & NECK

Q. 4 Write short notes on (any two)

**2 x 5 marks = 10**

- 1) NEUROANATOMY
- 2) NEUROANATOMY
- 3) NEUROANATOMY

Q. 5 Write short notes on (any two)

**2 x 5 marks = 10**


- 1) GENERAL HISTOLOGY
- 2) GENERAL HISTOLOGY
- 3) GENERAL HISTOLOGY

**SECTION – II**

Q. 6 Give answer in **one/two** sentences:

**8 x 1 mark = 08**

- 1) UPPER LIMB
- 2) UPPER LIMB
- 3) UPPER LIMB
- 4) GENERAL EMBRYOLOGY
- 5) GENERAL EMBRYOLOGY
- 6) GENERAL EMBRYOLOGY
- 7) GENERAL ANATOMY
- 8) GENERAL ANATOMY

  
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Q.7 Long answer question (any one)

1 x 12 marks = 12

- 1) UPPER LIMB
- 2) UPPER LIMB

Q. 8 Write short notes on (any two)

2 x 5 marks = 10

- 1) GENERAL EMBRYOLOGY
- 2) GENERAL EMBRYOLOGY
- 3) GENERAL EMBRYOLOGY

Q. 9 Write short notes on (any two)

2 x 5 marks = 10

- 1) GENERAL ANATOMY
- 2) GENERAL ANATOMY
- 3) GENERAL ANATOMY

Q.10 Answer in brief:

5 x 2 marks = 10

- 1) HEAD AND NECK
- 2) NEUROANATOMY
- 3) GENERAL HISTOLOGY
- 4) GENERAL EMBRYOLOGY
- 5) AETCOM



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**FIRST MBBS HUMAN ANATOMY PAPER STYLE**  
**PAPER 2**

Time: 3 Hours

Total marks 100

**THORAX, ABDOMEN, LOWER LIMB, SYSTEMIC HISTOLOGY &  
SYSTEMIC EMBRYOLOGY, GENETICS**

**Instructions:**

- Write each section in separate answer sheet
- Start each question from new page
- Draw diagrams wherever necessary

**SECTION – I**

**Q. 1 Give answer in one/two sentences:**

**8 x 1 marks = 08**

- 1) ABDOMEN
- 2) ABDOMEN
- 3) ABDOMEN
- 4) THORAX
- 5) THORAX
- 6) THORAX
- 7) SYSTEMIC HISTOLOGY
- 8) SYSTEMIC HISTOLOGY

**Q. 2 Long answer question (any one)**

**1 x 12 marks = 12**

- 1) ABDOMEN
- 2) ABDOMEN

**Q. 3 Write short notes on (any two)**

**2 x 5 marks = 10**

- 1) ABDOMEN
- 2) ABDOMEN
- 3) ABDOMEN

**Q. 4 Write short notes on (any two)**

**2 x 5 marks = 10**

- 1) THORAX
- 2) THORAX
- 3) THORAX

**Q. 5 Write short notes on (any two)**

**2 x 5 marks = 10**


- 1) SYSTEMIC HISTOLOGY
- 2) SYSTEMIC HISTOLOGY
- 3) SYSTEMIC HISTOLOGY

**SECTION – II**

**Q. 6 Give answer in one/two sentences:**

**8 x 1 marks = 08**

- 1) LOWER LIMB
- 2) LOWER LIMB
- 3) LOWER LIMB
- 4) SYSTEMIC EMBRYOLOGY
- 5) SYSTEMIC EMBRYOLOGY
- 6) SYSTEMIC EMBRYOLOGY
- 7) GENETICS
- 8) GENETICS

  
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Q.7 Long answer question (any one)

- 1) LOWER LIMB
- 2) LOWER LIMB

1 x 12 marks = 12

Q. 8 Write short notes on (any two)

- 1) SYSTEMIC EMBRYOLOGY
- 2) SYSTEMIC EMBRYOLOGY
- 3) SYSTEMIC EMBRYOLOGY

2 x 5 marks = 10

Q. 9 Write short notes on (any two)

- 1) GENETICS
- 2) GENETICS
- 3) GENETICS

2 x 5 marks = 10

Q.10 Answer in brief:

- 1) ABDOMEN
- 2) THORAX
- 3) LOWER LIMB
- 4) SYSTEMIC HISTOLOGY
- 5) SYSTEMIC EMBRYOLOGY

5 x 2 marks = 10



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