

# **ANATOMY**

## **CO-PO Matrices**

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 1.1	Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movement in our body	3	3	2	3	3	2	3
AN 1.2	Describe composition of bone and bone marrow	3	3	3	3	3	2	3
AN 2.1	Describe parts, blood and nerve supply of a long bone	3	3	3	3	2	3	3
AN 2.2	Enumerate laws of ossification	2	3	3	3	2	3	3
AN 2.3	Enumerate special features of a sesamoid bone	2	2	3	3	2	3	3

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AN 2.4	Describe various types of cartilage with its structure & distribution in body	2	2	2	2	3	2	3
AN 2.5	Describe various joints with subtypes and examples	3	2	3	2	3	2	3
AN 2.6	Explain the concept of nerve supply of joints & Hilton's law	3	3	2	3	3	2	3
AN 3.1	Classify muscle tissue according to structure & action	2	3	2	2	2	3	3
AN 3.2	Enumerate parts of skeletal muscle and differentiate between tendons and aponeuroses with examples	2	2	2	3	3	3	3
AN 3.3	Explain Shunt and spurt muscles	3	3	2	3	3	3	2
AN 4.1	Describe different types of skin & dermatomes in body	3	3	2	2	3	3	3
AN	Describe structure & function of skin with its appendages	3	2	2	2	3	2	3

4.2								
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AN 4.3	Describe superficial fascia along with fat distribution in body	3	3	2	3	3	2	3
AN 4.4	Describe modifications of deep fascia with its functions	3	2	3	2	3	3	3
AN 4.5	Explain principles of skin incisions	3	3	3	2	3	3	3
AN 5.1	Differentiate between blood vascular and lymphatic system	3	3	3	2	3	3	3
AN 5.2	Differentiate between pulmonary and systemic circulation	3	2	3	2	3	2	3
AN 5.3	List general differences between arteries & veins	3	3	2	2	3	2	3
AN 5.4	Explain functional difference between elastic, muscular arteries and arterioles	2	2	3	3	2	2	3

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AN 5.5	Describe portal system giving examples	3	3	2	2	2	3	3
AN 5.6	Describe the concept of anastomoses and collateral circulation with significance of end-arteries	3	2	2	2	3	2	3
AN 5.7	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses	3	2	2	3	3	3	2
AN 5.8	Define thrombosis, infarction & aneurysm	3	3	3	2	3	2	3
AN 6.1	List the components and functions of the lymphatic system	3	2	2	2	3	2	3
AN 6.2	Describe structure of lymph capillaries & mechanism of lymph circulation	3	2	3	3	2	2	3
AN 6.3	Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system	3	3	2	2	3	2	3

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AN 7.1	Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems	2	2	3	3	2	3	3
AN 7.2	List components of nervous tissue and their functions	2	3	3	2	3	3	2
AN 7.3	Describe parts of a neuron and classify them based on number of neurites, size & function	2	2	3	2	3	2	3
AN 7.4	Describe structure of a typical spinal nerve	3	3	2	2	3	2	2
AN 7.5	Describe principles of sensory and motor innervation of muscles	3	2	3	3	2	3	3
AN 7.6	Describe concept of loss of innervation of a muscle with its applied anatomy	3	2	2	2	2	3	3
AN 7.7	Describe various type of synapse	2	3	2	2	2	2	3

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AN 7.8	Describe differences between sympathetic and spinal ganglia	3	2	3	2	3	3	2
AN 8.1	Identify the given bone, its side, important features & keep it in anatomical position	3	3	3	2	3	2	3
AN 8.2	Identify & describe joints formed by the given bone	3	3	3	2	3	2	3
AN 8.3	Enumerate peculiarities of clavicle	3	2	3	3	3	2	3
AN 8.4	Demonstrate important muscle attachment on the given bone	2	3	2	2	3	3	3
AN 8.5	Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform	3	2	3	3	3	3	2
AN 8.6	Describe scaphoid fracture and explain the anatomical basis of avascular necrosis	3	3	2	2	3	3	3

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AN 9.1	Describe attachment, nerve supply & action of pectoralis major and pectoralis minor	3	3	2	2	3	2	3
AN 9.2	Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	3	2	3	2	3	2	3
AN 9.3	Describe development of breast	3	3	2	3	3	2	3
AN 10.1	Identify & describe boundaries and contents of axilla	3	2	2	3	2	3	3
AN 10.2	Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein	3	2	3	2	3	2	3
AN 10.3	Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of	3	3	2	2	3	3	3

	terminal branches of brachial plexus							
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AN 10.4	Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	3	2	3	2	3	2	3
AN 10.5	Explain variations in formation of brachial plexus	2	3	3	2	3	2	3
AN 10.6	Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis	1	1	1	3	2	2	3
AN 10.7	Explain anatomical basis of enlarged axillary lymph nodes	3	3	2	2	3	3	3
AN 10.8	Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi	3	2	3	3	3	3	3
AN 10.9	Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation	3	2	3	2	3	3	3

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AN 10.10	Describe and identify the deltoid and rotator cuff muscles	3	3	2	2	3	3	3
AN 10.11	Describe & demonstrate attachment of serratus anterior with its action	3	2	2	2	3	2	3
AN 10.12	Describe and demonstrate shoulder joint for–type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	3	2	3	3	3	3	3
AN 10.13	Explain anatomical basis of Injury to axillary nerve during intramuscular injections	3	3	3	2	2	3	3
AN 11.1	Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii	3	2	3	2	3	2	3
AN 11.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in	2	3	3	3	3	2	3

	arm							
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AN 11.3	Describe the anatomical basis of Venepuncture of cubital veins	3	3	2	2	3	2	3
AN 11.4	Describe the anatomical basis of Saturday night paralysis	3	3	2	2	3	2	2
AN 11.5	Identify & describe boundaries and contents of cubital fossa	3	2	3	3	3	2	3
AN 11.6	Describe the anastomosis around the elbow joint	3	2	2	2	3	2	3
AN 12.1	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions	3	2	3	3	3	3	3
AN 12.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm	3	2	2	2	3	3	3
AN	Identify & describe flexor retinaculum with its attachments	3	2	2	2	3	2	3

12.3								
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AN 12.4	Explain anatomical basis of carpal tunnel syndrome	3	2	3	2	3	2	3
AN 12.5	Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved	3	2	3	3	3	2	3
AN 12.6	Describe & demonstrate movements of thumb and muscles involved	3	3	3	2	2	3	3
AN 12.7	Identify & describe course and branches of important blood vessels and nerves in hand	3	2	3	2	3	2	3
AN 12.8	Describe anatomical basis of Claw hand	3	3	2	3	3	3	3
AN 12.9	Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths	3	2	2	2	3	2	3
AN 12.10	Explain infection of fascial spaces of palm	3	2	2	2	3	2	3
AN	Identify, describe and demonstrate important muscle groups of dorsal	3	3	2	3	2	2	3

12.11	forearm with attachments, nerve supply and actions							
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AN 12.12	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm	2	2	2	2	3	3	3
AN 12.13	Describe the anatomical basis of Wrist drop	3	2	3	2	3	3	3
AN 12.14	Identify & describe compartments deep to extensor retinaculum	3	3	3	2	3	2	3
AN 12.15	Identify & describe extensor expansion formation	2	2	3	2	2	2	3
AN 13.1	Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage	3	2	3	2	3	2	3
AN 13.2	Describe dermatomes of upper limb	3	2	3	3	2	3	3
AN 13.3	Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of	3	3	2	2	2	3	3

	elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint							
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AN 13.4	Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint	2	2	3	2	2	2	3
AN 13.5	Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand	3	2	2	3	3	3	2
AN 13.6	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	3	3	2	2	2	2	3
AN 13.7	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	3	2	2	2	3	2	3
AN 13.8	Describe development of upper limb	3	2	2	3	3	2	3

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AN 14.1	Identify the given bone, its side, important features & keep it in anatomical position	2	3	2	2	3	3	3
AN 14.2	Identify & describe joints formed by the given bone	3	2	3	3	3	2	3
AN 14.3	Describe the importance of ossification of lower end of femur & upper end of tibia	3	3	2	2	3	3	3
AN 14.4	Identify and name various bones in the articulated foot with individual muscle attachment	3	2	3	2	3	2	3
AN 15.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh	3	3	2	2	3	2	3
AN 15.2	Describe and demonstrate major muscles with their attachment, nerve supply and actions	3	2	3	3	2	2	2
AN 15.3	Describe and demonstrate boundaries, floor, roof and contents of femoral	3	2	3	2	2	3	3

	triangle							
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AN 15.4	Explain anatomical basis of Psoas abscess & Femoral hernia	3	3	3	2	2	2	1
AN 15.5	Describe and demonstrate adductor canal with its content	2	2	2	3	3	2	3
AN 16.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region	3	2	2	2	2	2	3
AN 16.2	Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections	3	3	3	2	3	3	3
AN 16.3	Explain the anatomical basis of Trendelenburg sign	3	3	3	3	2	2	3
AN 16.4	Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions	3	3	2	2	3	3	3
AN 16.5	Describe and demonstrate the origin, course, relations, branches (or	3	2	3	3	3	3	2

	tributaries), termination of important nerves and vessels on the back of thigh							
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AN 16.6	Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa	3	3	2	2	3	3	3
AN 17.1	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	3	2	2	2	2	2	3
AN 17.2	Describe anatomical basis of complications of fracture neck of femur	1	2	2	2	2	2	2
AN 17.3	Describe dislocation of hip joint and surgical hip replacement	3	3	2	3	2	2	2
AN 18.1	Describe and demonstrate major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions	2	2	2	2	2	3	3

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AN 18.2	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg	3	2	2	2	2	2	2
AN 18.3	Explain the anatomical basis of foot drop	2	3	2	3	3	3	2
AN 18.4	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	3	2	2	2	2	2	3
AN 18.5	Explain the anatomical basis of locking and unlocking of the knee joint	3	3	2	2	2	2	3
AN 18.6	Describe knee joint injuries with its applied anatomy	3	2	2	3	2	2	3
AN 18.7	Explain anatomical basis of Osteoarthritis	3	3	2	2	3	3	3
AN 19.1	Describe and demonstrate the major muscles of back of leg with their	2	2	2	3	3	3	2

	attachment, nerve supply and actions							
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AN 19.2	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg	3	2	3	3	3	3	3
AN 19.3	Explain the concept of “Peripheral heart”	3	3	3	2	3	2	3
AN 19.4	Explain the anatomical basis of rupture of calcaneal tendon	3	2	2	2	3	2	3
AN 19.5	Describe factors maintaining importance arches of the foot with its importance	3	2	3	3	2	2	3
AN 19.6	Explain the anatomical basis of Flat foot & Club foot	2	3	3	2	2	3	3
AN 19.7	Explain the anatomical basis of Metatarsalgia & Plantar fasciitis	3	2	3	2	2	2	2
AN 20.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood	3	3	3	3	3	3	3

	and nerve supply of tibiofibular and ankle joint							
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AN 20.2	Describe the subtalar and transverse tarsal joints	3	3	2	2	3	2	3
AN 20.3	Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb	3	3	3	2	3	2	3
AN 20.4	Explain anatomical basis of enlarged inguinal lymph nodes	2	2	3	3	2	2	3
AN 20.5	Explain anatomical basis of varicose veins and deep vein thrombosis	3	2	2	2	3	3	3
AN 20.6	Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb	3	3	3	3	3	2	3
AN 20.7	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,	3	2	2	2	3	3	3

	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							
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AN 20.8	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment	3	3	3	2	3	2	3
AN 20.9	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	3	3	2	2	3	2	3
AN 20.10	Describe basic concept of development of lower limb	2	2	3	2	3	2	3

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AN 21.1	Identify and describe the salient features of sternum, typical rib, 1st rib and typical thoracic vertebra	3	3	2	3	2	3	3
AN 21.2	Identify & describe the features of 2nd, 11th and 12th ribs, 1st, 11th and 12th thoracic vertebrae	3	2	3	3	3	2	3
AN 21.3	Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet	3	3	2	3	3	3	2
AN 21.4	Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles	3	2	3	2	3	2	3
AN 21.5	Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve	3	2	3	2	3	2	3
AN 21.6	Mention origin, course and branches/ tributaries of: 1) anterior & posterior intercostal vessels 2) internal thoracic vessels	3	3	2	3	2	2	3
AN 21.7	Mention the origin, course, relations and branches of	3	2	2	2	3	3	3

	1) atypical intercostal nerve 2) superior intercostal artery, subcostal artery							
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AN 21.8	Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints	3	2	2	3	3	3	2
AN 21.9	Describe & demonstrate mechanics and types of respiration	3	2	3	2	3	3	3
AN 21.10	Describe costochondral and interchondral joints	3	2	2	2	2	2	3
AN 21.11	Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum	3	3	3	2	2	2	2
AN 22.1	Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium	3	3	2	3	2	2	2
AN 22.2	Describe & demonstrate external and internal features of each chamber of heart	3	3	2	2	2	3	3

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AN 22.3	Describe & demonstrate origin, course and branches of coronary arteries	3	3	3	2	3	2	3
AN 22.4	Describe anatomical basis of ischaemic heart disease	3	3	2	3	3	3	2
AN 22.5	Describe & demonstrate the formation, course, tributaries and termination of coronary sinus	3	2	3	2	3	2	3
AN 22.6	Describe the fibrous skeleton of heart	3	3	3	2	3	2	3
AN 22.7	Mention the parts, position and arterial supply of the conducting system of heart	3	3	2	3	3	2	3
AN 23.1	Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus	3	3	3	2	3	3	3
AN 23.2	Describe & demonstrate the extent, relations tributaries of thoracic duct and enumerate its applied anatomy	3	3	3	3	3	3	3

CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communi- cator	PO4 Lifelong learner	PO5 Professio- nal	PO6 Critical Thinker	PO7 Researcher
AN 23.3	Describe & demonstrate origin, course, relations, tributaries and termination of superior venacava, azygos, hemiazygos and accessory hemiazygos veins	3	3	2	2	3	3	3
AN 23.4	Mention the extent, branches and relations of arch of aorta & descending thoracic aorta	3	3	3	2	3	2	3
AN 23.5	Identify & Mention the location and extent of thoracic sympathetic chain	3	3	2	2	3	2	2
AN 23.6	Describe the splanchnic nerves	3	3	2	3	3	2	2
AN 23.7	Mention the extent, relations and applied anatomy of lymphatic duct	3	2	3	2	3	3	3
AN 24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	3	3	3	2	3	2	3
AN	Identify side, external features and relations of	3	2	3	3	3	2	3

24.2	structures which form root of lung & bronchial tree and their clinical correlate							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 24.3	Describe a bronchopulmonary segment	3	2	3	2	2	2	3
AN 24.4	Identify phrenic nerve & describe its formation & distribution	2	3	2	2	3	2	3
AN 24.5	Mention the blood supply, lymphatic drainage and nerve supply of lungs	3	3	2	3	2	2	3
AN 24.6	Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea	3	3	2	2	3	3	3
AN 25.1	Identify, draw and label a slide of trachea and lung	3	2	1	3	3	3	1
AN 25.2	Describe development of pleura, lung & heart	3	3	2	2	3	3	2
AN 25.3	Describe fetal circulation and changes occurring at birth	3	3	3	2	3	2	3
AN 25.4	Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal	3	3	2	2	3	2	3

	defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 25.5	Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta	3	3	3	3	3	2	2
AN 25.6	Mention development of aortic arch arteries, SVC, IVC and coronary sinus	2	2	2	1	3	3	3
AN 25.7	Identify structures seen on a plain x-ray chest (PA view)	3	3	3	2	3	2	3
AN 25.8	Identify and describe in brief a barium swallow	3	3	2	3	3	3	3
AN 25.9	Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart	3	3	3	2	2	2	3
AN	Demonstrate anatomical position of skull,	2	3	2	2	2	2	3

26.1	Identify and locate individual skull bones in skull							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 26.2	Describe the features of norma frontalis, verticalis, occipitalis, lateralis and basalis	3	3	2	3	3	2	3
AN 26.3	Describe cranial cavity, its subdivisions, foramina and structures passing through them	3	3	2	2	3	3	3
AN 26.4	Describe morphological features of mandible	3	3	3	3	3	2	2
AN 26.5	Describe features of typical and atypical cervical vertebrae (atlas and axis)	3	3	3	2	3	2	3
AN 26.6	Explain the concept of bones that ossify in membrane	2	3	2	2	3	1	3
AN 26.7	Describe the features of the 7th cervical vertebra	2	2	2	2	3	2	3
AN 27.1	Describe the layers of scalp, its blood supply, its nerve supply and surgical importance	3	3	3	2	3	2	3

CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communicator	PO4 Lifelong learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher
AN 27.2	Describe emissary veins with its role in spread of infection from extracranial route to intracranial venous sinuses	3	3	3	2	3	2	3
AN 28.1	Describe & demonstrate muscles of facial expression and their nerve supply	3	2	3	3	3	2	3
AN 28.2	Describe sensory innervation of face	3	3	3	2	3	3	3
AN 28.3	Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels	3	3	3	2	2	2	3
AN 28.4	Describe & demonstrate branches of facial nerve with distribution	3	3	2	2	2	2	3
AN 28.5	Describe cervical lymph nodes and lymphatic drainage of head, face and neck	3	3	2	3	3	2	3
AN 28.6	Identify superficial muscles of face, their nerve supply and actions	3	3	2	2	3	2	3
AN 28.7	Explain the anatomical basis of facial nerve	3	3	2	3	3	3	3

	palsy							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 28.8	Explain surgical importance of deep facial vein	3	2	2	1	3	3	1
AN 28.9	Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	3	3	2	2	2	1	3
AN 28.10	Explain the anatomical basis of Frey's syndrome	3	3	2	2	3	2	2
AN 29.1	Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid	3	2	2	3	2	2	2
AN 29.2	Explain anatomical basis of Erb's & Klumpke's palsy	3	3	2	1	3	3	3
AN 29.3	Explain anatomical basis of wry neck	3	2	2	1	3	2	1
AN 29.4	Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2)scalenus anterior, 3) scalenus medius & 4)	3	3	2	3	3	3	2

	levator scapulae							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 30.1	Describe the cranial fossae & identify related structures	3	3	2	2	3	2	3
AN 30.2	Describe & identify major foramina with structures passing through them	3	3	3	2	3	2	3
AN 30.3	Describe & identify dural folds & dural venous sinuses	3	3	3	3	2	2	3
AN 30.4	Describe clinical importance of dural venous sinuses	3	3	2	2	3	3	3
AN 30.5	Explain effect of pituitary tumours on visual pathway	3	3	2	3	3	3	2
AN 31.1	Describe & identify extra ocular muscles of eyeball	3	3	2	1	3	3	1
AN 31.2	Describe & demonstrate nerves and vessels in the orbit	3	3	2	2	2	1	3
AN 31.3	Describe anatomical basis of Horner's syndrome	3	3	2	2	3	2	2
AN 31.4	Enumerate components of lacrimal apparatus	3	3	3	3	2	2	2

CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communicator	PO4 Lifelong learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher
AN 31.5	Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	3	3	2	1	2	3	3
AN 32.1	Describe boundaries and subdivisions of anterior triangle	3	2	3	1	3	2	1
AN 32.2	Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles	3	2	2	3	3	3	2
AN 33.1	Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae	3	2	2	2	2	2	3
AN 33.2	Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	3	2	2	2	3	2	3
AN 33.3	Describe & demonstrate articulating surface, type & movements of temporomandibular joint	3	2	3	3	3	2	3
AN 33.4	Explain the clinical significance of pterygoid venous plexus	3	3	2	2	3	3	3

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communi- cator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professio- nal</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 33.5	Describe the features of dislocation of temporomandibular joint	3	2	3	3	3	3	2
AN 34.1	Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion	3	3	3	1	3	3	1
AN 34.2	Describe the basis of formation of submandibular stones	3	2	2	2	2	1	3
AN 35.1	Describe the parts, extent, attachments, modifications of deep cervical fascia	3	2	2	2	2	2	2
AN 35.2	Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland	3	3	3	3	2	2	2
AN 35.3	Demonstrate & describe the origin, parts, course & branches subclavian artery	3	3	2	1	2	3	3
AN 35.4	Describe & demonstrate origin, course, relations, tributaries and	3	3	3	1	2	2	1

	termination of internal jugular & brachiocephalic veins							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 35.5	Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes	3	2	2	3	3	3	2
AN 35.6	Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain	3	2	2	2	2	2	3
AN 35.7	Describe the course and branches of IX, X, XI & XII nerve in the neck	3	3	2	2	3	2	3
AN 35.8	Describe the anatomically relevant clinical features of Thyroid swellings	3	3	3	3	3	2	3
AN 35.9	Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib	3	3	2	2	3	3	3
AN 35.10	Describe the fascial spaces of neck	3	2	2	3	3	3	2
AN 36.1	Describe the 1) morphology, relations, blood supply and applied anatomy	3	3	3	1	3	3	1

	of palatine tonsil 2) composition of soft palate							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 36.2	Describe the components and functions of Waldeyer's lymphatic ring	3	2	2	2	3	1	3
AN 36.3	Describe the boundaries and clinical significance of pyriform fossa	3	2	2	2	3	2	2
AN 36.4	Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess	3	3	3	3	3	2	2
AN 36.5	Describe the clinical significance of Killian's dehiscence	3	3	2	1	2	3	3
AN 37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply	3	3	3	1	3	2	1
AN 37.2	Describe location and functional anatomy of paranasal sinuses	3	3	2	3	3	3	2
AN 37.3	Describe anatomical basis of sinusitis & maxillary sinus tumours	3	2	2	2	3	2	3
AN 38.1	Describe the morphology, identify structure of the wall, nerve supply,	3	3	2	2	3	2	3

	blood supply and actions of intrinsic and extrinsic muscles of the larynx							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 38.2	Describe the anatomical aspects of laryngitis	3	2	3	3	3	2	3
AN 38.3	Describe anatomical basis of recurrent laryngeal nerve injury	3	3	2	2	3	3	3
AN 39.1	Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue	3	2	2	3	3	3	2
AN 39.2	Explain the anatomical basis of hypoglossal nerve palsy	3	3	3	1	3	3	1
AN 40.1	Describe & identify the parts, blood supply and nerve supply of external ear	3	3	2	2	2	1	3
AN 40.2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube	3	3	2	2	3	2	2

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communi- cator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professio- nal</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 40.3	Describe the features of internal ear	3	2	2	3	2	2	2
AN 40.4	Explain anatomical basis of otitis externa and otitis me	3	3	3	1	3	3	3
AN 40.5	Explain anatomical basis of myringotomy	3	2	3	1	3	2	1
AN 41.1	Describe & demonstrate parts and layers of eyeball	3	3	3	3	3	3	2
AN 41.2	Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion	3	3	3	2	3	2	3
AN 41.3	Describe the position, nerve supply and actions of intraocular muscles	3	3	3	2	3	2	3
AN 42.1	Describe the contents of the vertebral canal	2	3	3	3	3	2	3
AN 42.2	Describe & demonstrate the boundaries and contents of Suboccipital triangle	3	2	2	2	3	3	3
AN 42.3	Describe the position, direction of fibres, relations, nerve supply, actions	3	3	3	3	3	3	2

	of semispinalis capitis and splenius capitis							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 43.1	Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint	3	2	2	1	3	3	1
AN 43.2	Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina	3	2	2	2	2	1	3
AN 43.3	Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea-organ of corti, pineal gland	3	2	2	2	3	2	2
AN 43.4	Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye	3	2	2	3	2	2	2
AN	Demonstrate- 1) Testing of muscles of facial	3	3	2	2	3	3	3

43.5	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							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 43.6	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	3	2	2	1	3	2	1
AN 43.7	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 xray of paranasal sinuses	3	3	2	3	3	3	2
AN 43.8	Describe the anatomical route used for carotid angiogram and vertebral	3	2	2	2	3	2	3

	angiogram							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 43.9	Identify anatomical structures in carotid angiogram and vertebral angiogram	3	2	2	2	3	2	3
AN 44.1	Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen	3	3	2	3	2	2	3
AN 44.2	Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall	3	2	2	2	3	3	3
AN 44.3	Describe the formation of rectus sheath and its contents	3	3	2	3	3	3	2
AN 44.4	Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	3	3	2	1	3	3	1
AN 44.5	Explain the anatomical basis of inguinal hernia.	3	3	2	2	3	1	3

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 44.6	Describe & demonstrate attachments of muscles of anterior abdominal wall	3	3	2	2	3	2	2
AN 44.7	Enumerate common Abdominal incisions	3	3	2	3	3	2	2
AN 45.1	Describe Thoracolumbar fascia	3	3	2	1	2	3	3
AN 45.2	Describe & demonstrate Lumbar plexus for its root value, formation & branches	3	3	2	1	3	2	1
AN 45.3	Mention the major subgroups of back muscles, nerve supply and action	3	2	2	3	3	3	2
AN 46.1	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	3	3	2	2	3	2	3
AN 46.2	Describe parts of Epididymis	3	3	2	2	3	2	3
AN	Describe Penis under following headings: (parts,	3	3	2	3	2	2	3

46.3	components, blood supply and lymphatic drainage)							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 46.4	Explain the anatomical basis of Varicocoele	2	3	2	2	3	3	3
AN 46.5	Explain the anatomical basis of Phimosis & Circumcision	3	3	2	3	3	3	2
AN 47.1	Describe & identify boundaries and recesses of Lesser & Greater sac	3	3	2	1	3	3	1
AN 47.2	Name & identify various peritoneal folds & pouches with its explanation	3	3	2	2	2	1	3
AN 47.3	Explain anatomical basis of Ascites & Peritonitis	3	3	2	2	3	2	2
AN 47.4	Explain anatomical basis of Subphrenic abscess	3	3	2	3	3	2	2
AN 47.5	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	3	3	2	1	3	3	3

	drainage and applied aspects)							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 47.6	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	3	3	2	1	3	2	1
AN 47.7	Mention the clinical importance of Calot's triangle	3	2	2	3	3	3	2
AN 47.8	Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein	3	2	2	2	3	2	3
AN 47.9	Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery	3	3	2	2	3	2	3

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communi- cator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professio- nal</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 47.10	Enumerate the sites of portosystemic anastomosis	3	3	2	3	2	2	3
AN 47.11	Explain the anatomic basis of hematemesis & caput medusae in portal hypertension	3	3	2	2	3	3	3
AN 47.12	Describe important nerve plexuses of posterior abdominal wall	3	3	2	3	3	3	2
AN 47.13	Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm	3	3	2	1	3	3	1
AN 47.14	Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	3	3	2	2	2	1	3
AN 48.1	Describe & identify the muscles of Pelvic diaphragm	3	3	2	2	2	2	2
AN 48.2	Describe & demonstrate the (position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and	3	3	2	3	2	2	2

	clinical aspects of) important male & female pelvic viscera							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 48.3	Describe & demonstrate the origin, course, important relations and branches of internal iliac artery	3	2	2	1	2	3	3
AN 48.4	Describe the branches of sacral plexus	3	2	2	1	3	2	1
AN 48.5	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	3	3	2	3	3	3	2
AN 48.6	Describe the neurological basis of Automatic bladder	3	2	2	2	3	2	3
AN 48.7	Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	3	2	2	2	3	2	3
AN	Mention the structures palpable during vaginal &	3	3	2	3	3	2	3

48.8	rectal examination							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 49.1	Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)	3	3	2	2	3	3	3
AN 49.2	Describe & identify Perineal body	2	2	2	3	3	3	2
AN 49.3	Describe & demonstrate Perineal membrane in male & female	2	3	2	1	3	3	1
AN 49.4	Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	3	3	2	2	2	1	3
AN 49.5	Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure	3	2	2	2	3	2	2
AN 50.1	Describe the curvatures of the vertebral column	3	3	2	3	2	2	2
AN 50.2	Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis	3	3	2	1	2	3	3

CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communicator	PO4 Lifelong learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher
AN 50.3	Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)	3	3	2	1	3	2	1
AN 50.4	Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	3	3	2	3	3	3	2
AN 51.1	Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)	3	3	2	2	2	2	3
AN 51.2	Describe & identify the midsagittal section of male and female pelvis	3	3	2	2	2	2	3
AN 52.1	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	2	2	2	3	2	2	3
AN	Describe & identify the microanatomical	2	2	2	2	3	3	3

52.2	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							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 52.3	Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum	3	3	2	3	3	3	2
AN 52.4	Describe the development of anterior abdominal wall	2	2	2	1	3	3	1
AN 52.5	Describe the development and congenital anomalies of Diaphragm	3	3	2	2	2	1	3
AN 52.6	Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut	3	3	2	2	2	2	2
AN	Describe the development of Urinary system	2	2	2	3	2	2	2

52.7								
CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communicator	PO4 Lifelong learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher
AN 52.8	Describe the development of male & female reproductive system	3	3	2	1	2	3	3
AN 53.1	Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups	1	2	2	1	3	2	1
AN 53.2	Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet	3	3	2	3	3	3	2
AN 53.3	Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis	3	3	2	2	3	2	3
AN 53.4	Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)	3	3	2	2	3	2	3
AN 54.1	Describe & identify features of plain X ray abdomen	3	3	2	3	3	2	3

CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communicator	PO4 Lifelong learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher
AN 54.2	Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)	3	3	2	2	3	3	3
AN 54.3	Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	3	3	2	3	3	3	2
AN 55.1	Demonstrate the surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point	3	3	2	1	3	3	1
AN 55.2	Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery	2	2	2	2	2	1	3
AN	Describe & identify various layers of meninges	3	3	2	2	3	2	2

56.1	with its extent & modifications							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 56.2	Describe circulation of CSF with its applied anatomy	3	3	2	3	3	2	2
AN 57.1	Identify external features of spinal cord	3	3	2	1	3	3	3
AN 57.2	Describe extent of spinal cord in child & adult with its clinical implication	3	3	2	1	3	2	1
AN 57.3	Draw & label transverse section of spinal cord at mid-cervical & midthoracic level	2	2	2	3	3	3	2
AN 57.4	Enumerate ascending & descending tracts at mid thoracic level of spinal cord	3	3	2	2	3	2	3
AN 57.5	Describe anatomical basis of syringomyelia	3	2	2	2	3	2	3
AN 58.1	Identify external features of medulla oblongata	3	3	2	3	3	2	3
AN 58.2	Describe transverse section of medulla oblongata at the level of 1)	3	3	2	2	3	3	3

	pyramidal decussation, 2) sensory decussation 3) ION							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 58.3	Enumerate cranial nerve nuclei in medulla oblongata with their functional group	3	2	2	3	3	3	2
AN 58.4	Describe anatomical basis & effects of medial & lateral medullary syndrome	3	3	2	1	3	3	1
AN 59.1	Identify external features of pons	3	2	2	2	2	1	3
AN 59.2	Draw & label transverse section of pons at the upper and lower level	3	2	2	2	2	2	2
AN 59.3	Enumerate cranial nerve nuclei in pons with their functional group	3	2	2	3	3	2	2
AN 60.1	Describe & demonstrate external & internal features of cerebellum	3	2	2	1	3	3	3
AN 60.2	Describe connections of cerebellar cortex and intracerebellar nuclei	3	3	2	1	3	2	1
AN	Describe anatomical basis of cerebellar	3	2	2	3	3	3	2

60.3	dysfunction							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 61.1	Identify external & internal features of midbrain	3	2	2	2	3	2	3
AN 61.2	Describe internal features of midbrain at the level of superior & inferior colliculus	3	3	2	2	3	2	3
AN 61.3	Describe anatomical basis & effects of Benedikt's and Weber's syndrome	3	3	2	3	2	2	3
AN 62.1	Enumerate cranial nerve nuclei with its functional component	3	3	2	2	3	3	3
AN 62.2	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere	3	3	2	3	3	3	2
AN 62.3	Describe the white matter of cerebrum	3	3	2	1	3	3	1
AN 62.4	Enumerate parts & major connections of basal ganglia & limbic lobe	3	3	2	2	2	1	3
AN 62.5	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus,	3	3	2	2	3	2	2

	metathalamus and subthalamus							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 62.6	Describe & identify formation, branches & major areas of distribution of circle of Willis	3	3	2	3	2	2	2
AN 63.1	Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle	3	2	2	1	2	3	3
AN 63.2	Describe anatomical basis of congenital hydrocephalus	3	3	2	1	3	2	1
AN 64.1	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum	2	2	2	3	3	3	2
AN 64.2	Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	2	2	2	2	3	2	3
AN 64.3	Describe various types of open neural tube defects with its embryological	3	3	2	2	3	2	3

	basis							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 65.1	Identify epithelium under the microscope & describe the various types that correlate to its function	3	2	2	3	2	2	3
AN 65.2	Describe the ultrastructure of epithelium	3	2	2	2	3	3	3
AN 66.1	Describe & identify various types of connective tissue with functional correlation	3	2	2	3	3	3	2
AN 66.2	Describe the ultrastructure of connective tissue	1	2	1	1	3	3	1
AN 67.1	Describe & identify various types of muscle under the microscope	2	3	2	2	3	1	3
AN 67.2	Classify muscle and describe the structure-function correlation of the same	2	2	2	2	3	2	2
AN 67.3	Describe the ultrastructure of muscular tissue	2	2	2	3	3	2	2
AN 68.1	Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve	2	2	2	1	3	3	3

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communi- cator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professio- nal</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 68.2	Describe the structure-function correlation of neuron	3	2	2	1	3	2	1
AN 68.3	Describe the ultrastructure of nervous tissue	2	3	2	3	3	3	2
AN 69.1	Identify elastic & muscular blood vessels, capillaries under the microscope	2	2	2	2	3	2	3
AN 69.2	Describe the various types and structure-function correlation of blood vessel	2	3	2	2	3	2	3
AN 69.3	Describe the ultrastructure of blood vessels	2	2	2	3	3	2	3
AN 70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	2	2	2	2	3	3	3
AN 70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	3	3	2	3	3	3	2

CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communi- cator	PO4 Lifelong learner	PO5 Professio- nal	PO6 Critical Thinker	PO7 Researcher
AN 71.1	Identify bone under the microscope; classify various types and describe the structure-function correlation of the same	2	2	1	1	3	3	1
AN 71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same	2	2	2	2	3	1	3
AN 72.1	Identify the skin and its appendages under the microscope and correlate the structure with function	2	3	2	2	3	2	2
AN 73.1	Describe the structure of chromosomes with classification	3	2	2	3	3	2	2
AN 73.2	Describe technique of karyotyping with its applications	3	2	2	1	3	3	3
AN 73.3	Describe the Lyon's hypothesis	3	1	1	1	3	2	1
AN 74.1	Describe the various modes of inheritance with examples	3	3	2	3	3	3	2
AN 74.2	Draw pedigree charts for the various types of inheritance & give examples	3	3	2	2	3	2	3

	of diseases of each mode of inheritance							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 74.3	Describe multifactorial inheritance with examples	3	3	2	2	3	2	3
AN 74.4	Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia	3	3	1	3	2	2	3
AN 75.1	Describe the structural and numerical chromosomal aberrations	3	3	2	2	3	3	3
AN 75.2	Explain the terms mosaics and chimeras with example	3	3	1	3	3	3	2
AN 75.3	Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome	3	3	1	1	3	3	1
AN 75.4	Describe genetic basis of variation: polymorphism and mutation	3	2	2	2	2	1	3
AN 75.5	Describe the principles of genetic counselling	3	3	2	2	3	2	2

<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communi- cator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professio- nal</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 76.1	Describe the stages of human life	3	3	1	3	2	2	2
AN 76.2	Explain the terms- phylogeny, ontogeny, trimester, viability	3	3	2	1	2	3	3
AN 77.1	Describe the uterine changes occurring during the menstrual cycle	3	3	1	1	3	2	1
AN 77.2	Describe the synchrony between the ovarian and menstrual cycles	3	3	2	3	3	3	2
AN 77.3	Describe spermatogenesis and oogenesis along with diagrams	3	3	2	2	3	2	3
AN 77.4	Describe the stages and consequences of fertilisation	3	3	2	2	3	2	3
AN 77.5	Enumerate and describe the anatomical principles underlying contraception	3	3	3	3	2	2	3
AN 77.6	Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of “sex-ratio”.	3	3	2	2	3	3	3
AN	Describe cleavage and formation of blastocyst	3	2	3	3	3	3	2

78.1								
CO ↓	Competencies	PO1 Clinician	PO2 Leader and member of the health care team and system	PO3 Communicator	PO4 Lifelong learner	PO5 Professional	PO6 Critical Thinker	PO7 Researcher
AN 78.2	Describe the development of trophoblast	3	2	1	1	3	3	1
AN 78.3	Describe the process of implantation & common abnormal sites of implantation	3	2	3	2	3	3	3
AN 78.4	Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate	3	2	2	2	3	2	3
AN 78.5	Describe in brief abortion; decidual reaction, pregnancy test	3	3	3	3	2	2	3
AN 79.1	Describe the formation & fate of the primitive streak	3	2	2	1	2	3	3
AN 79.2	Describe formation & fate of notochord	3	2	1	1	3	2	1
AN 79.3	Describe the process of neurulation	3	2	2	3	3	3	2
AN 79.4	Describe the development of somites and intra-embryonic coelom	3	2	2	2	3	2	3
AN	Explain embryological basis of congenital	3	3	2	2	3	2	3

79.5	malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	3	2	3	2	3	2	3
AN 80.1	Describe formation, functions & fate of-chorion: amnion; yolk sac; allantois & decidua	3	2	2	3	3	3	3
AN 80.2	Describe formation & structure of umbilical cord	3	1	3	1	3	3	2
AN 80.3	Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier	3	2	3	2	3	3	1
AN 80.4	Describe embryological basis of twinning in monozygotic & dizygotic twins	3	3	2	2	3	1	3
AN 80.5	Describe role of placental hormones in uterine growth & parturition	3	2	2	3	3	2	2
AN 80.6	Explain embryological basis of estimation of	3	3	3	1	3	2	2

	fetal age.							
<b>CO</b> ↓	<b>Competencies</b>	<b>PO1 Clinician</b>	<b>PO2 Leader and member of the health care team and system</b>	<b>PO3 Communicator</b>	<b>PO4 Lifelong learner</b>	<b>PO5 Professional</b>	<b>PO6 Critical Thinker</b>	<b>PO7 Researcher</b>
AN 80.7	Describe various types of umbilical cord attachments	3	2	2	1	3	3	3
AN 81.1	Describe various methods of prenatal diagnosis	3	3	3	3	3	2	1
AN 81.2 81.3	Describe indications, process and disadvantages of amniocentesis	3	3	2	2	3	3	2
AN 82.1	Describe indications, process and disadvantages of chorion villus biopsy	3	2	2	2	3	2	3