

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Question 1:	Demonstrate the bony features on these x-rays	Elbow joint Distal Humerus: Med and lat epicondyles*, trochlea and capitulum*, olecranon fossa Prox. Radius: Radial head* and neck, prox. radio-ulnar joint, biceps tuberosity Prox. Ulna: Coronoid process, trochlear notch, olecranon*	At least 5 to pass
	Indicate the common extensor origin and name the muscles that arise from it.	Lat. Epicondyle*: Ext. carpi radialis brevis Ext. digitorum Ext. digiti minimi Ext carpi ulnaris Others that arise from lat epicondyle: anconeus and superficial head of supinator	* plus 2 of 4 muscles to pass
Question 2: Larynx	Using the model, demonstrate the main features of the larynx. Remove left side of mandible and tongue.	1) From epiglottis to inf border of cricoid 2) Cartilages(9). Thyroid: sup/inf horns/oblique line/laryngeal prominence/laminae/thyroid notch. Cricoid: cricothyroid joint>allows change in length of vocal cords. Epiglottis. Cuneiform and Corniculate(paired). Arytenoid(paired) 3) Membranes: Thyrohyoid and median cricothyroid 4) Ligaments: Cricotracheal/med and lat cricothyroid. Aryepiglottic/thyroepiglottic. Med and lat thyrohyoid	Need all to pass Thyroid cartilage Cricoid cartilage Epiglottis Cricothyroid membrane Location of the arytenoids
	What is the motor innervation of the muscles of the larynx	<u>Extrinsic</u> : Infrahyoid/suprahyoid/stylopharyngeus. CNX Recurrent laryngeal > sup and inf laryngeal <u>Intrinsic</u> : CNX > rec. laryngeal supplies all except cricothyroid supplied by ext branch of sup. Laryngeal. Principal adductors: lat. cricoarytenoid(plus trans and oblique arytenoids) Principal abductors: post cricoarytenoid	To pass: Recurrent laryngeal nerve

		<p>Tensor: cricothyroid Relaxer: Thyroarytenoid Sphincters: Action of most other than post cricothyroid</p>	
Question 3: Bone: Tibia	<p>Describe the features of the proximal end of this bone Prompt "Demonstrate the attachments of the menisci and cruciate ligaments."</p>	<p>Meniscal attachments Anterior and posterior cruciate attachments Capsular margin Tibial tuberosity Median and lateral condyles Tibiofibular joint</p>	At least 4 bony features to pass
Question 4: Photo pelvis	<p>Please demonstrate the major anatomical structures in the photo</p>	<p>Aorta Common iliac vessels Internal and external iliac veins and arteries Ureters Bladder Psoas muscle</p>	At least 8 items to pass
	<p>Please describe the innervation of the bladder</p>	<p>Presynaptic sympathetic fibers (T11-L2/3) via hypogastric plexus (Excite internal urethral sphincter) Presynaptic parasympathetic fibers (Motor to detrusor and inhibitory to internal urethral sphincter) (S2-4) via Splanchnic nerve and inferior hypogastric nerve These synapse with post synaptic neurone on or near bladder wall Inferior to pelvic line (reflex and pain) - Visceral afferent follow P/S fibers retrograde to S2-4 spinal ganglia Superior to pelvic line (pain)- Follow sympathetic fibers retrograde to T11-L2/3 Somatic to external urethral sphincter, urethra via pudendal nerve (S2-4)</p>	<p>To pass: Describe the effects of sympathetic and parasympathetic stimulation on the bladder</p>
	<p>Please identify any nerves that innervate the bladder.</p>	<p>Inferior/superior hypogastric plexus, left and right hypogastric nerve Splanchnic nerve</p>	Bonus question

<p>Question 5: Discussion</p>	<p>Please draw the circle of Willis.  What area of the brain does each branch supply?</p>	<p>2 vertebrals (from subclavian) unite to form the basilar, which in turn divides into 2 post. Cerebrals. Basilar &gt; brainstem, cerebellum and meninges Post. Cerebral &gt; inferior aspect of cerebrum and occipital lobe L and R internal carotids(from common carotid). Each gives rise to an ant. and middle cerebral art. Ant cerebral &gt; medial and sup surface and frontal poles. Middle cerebral(continuation of ICA after origin of ACA) &gt; lat surface of brain and temporal lobe</p>	<p>Need Verts, ICAs and Anterior, middle and posterior cerebral (as well as areas of brain supplied by the latter 3 branches) to pass.</p>
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Question 1: X-ray Abdo CT	<p>1. Identify the structures present in this CT of the abdomen with contrast.</p> <p>2. Which structures are retroperitoneal?</p> <p>3. Demonstrate the potential spaces for fluid collection in the supine position.</p>	<p>Liver, spleen, kidneys, pancreas</p> <p>Pancreas, kidneys, aorta, IVC</p> <p>Hepatorenal space</p> <p>Splenorenal space</p>	<p>At least 6 to pass (1 point only for kidneys)</p> <p>At least 3 to pass</p> <p>Need both to pass</p>
Question 2: (Day 1 pm session) Bone : Tibia and Fibula	<p>1. Describe the proximal Tibiofibular joint (Tibia and fibula put together for candidates)</p> <p>2. What structures can be damaged by direct trauma to the region of the proximal fibula?</p> <p>3. Describe the consequences of injury to the Common peroneal nerve?</p>	<p>1. Identify proximal fibula and articular area of fibula and tibia</p> <p>Synovial joint, separate to knee joint, minimal movement possible</p> <p>2 &amp; 3 <b>Lateral collateral ligament</b> <b>Biceps femoris tendon</b> <b>Common peroneal nerve</b></p> <p>Superficial fibular nerve – weakness of ankle eversion (and slight reduction in plantar flexion), sensory loss over lateral aspect of leg , reduced sensation over posterior aspect of leg and lateral aspect of foot ((Lateral) Sural nerve)</p> <p>Deep Fibular nerve (Anterior tibial) – weakness of ankle dorsiflexion (T.Anterior), sensory loss dorsum of foot and first interdigital cleft</p> <p>Injury to fibularis (peroneus) longus and brevis muscles– weakness of ankle eversion.</p>	<p>Pass</p> <p>1 – Correctly identify joint surfaces, note that separate to knee joint and that no movement possible</p> <p>2 To pass Common peroneal Nv and one other</p> <p>3 Loss of dorsiflexion and eversion to pass</p>
Question 3:	<p>Identify the chambers of the heart (heart closed)</p> <p>Identify the valves (heart open)</p> <p>Demonstrate the structures of the conducting system of the heart</p>	<p>L+R atria*, plus auricles</p> <p>L+R ventricles*</p> <p>Aortic, pulmonary, mitral and tricuspid valves*</p> <p>SA node*: Ant-lat near the junction of the SVC and R atrium</p> <p>AV node*: Post-inf region of the inter-atrial septum, near the opening of the coronary sinus</p> <p>AV Bundle of His: Through the fibrous skeleton of the heart, along the membranous part of the inter ventricular septum.</p> <p>Divides into R +L bundles which pass on each side of the muscular IV septum</p>	<p>* essentials to pass</p> <p>*essentials to pass</p>

<p>Question 4</p> <p>Photo neck</p>	<p>This is a lateral photo of the neck.</p> <p>Demonstrate the borders of the posterior triangle</p> <p>Demonstrate the borders of the anterior triangle</p> <p>What is this structure (12 – external carotid)</p> <p>- What are its branches?</p>	<p>SCM, Trapezius, Clavicle</p> <p>Midline, SCM, Mandible</p> <p>Ascending pharyngeal</p> <p>Superior thyroid</p> <p>Lingual</p> <p>Facial</p> <p>Occipital</p> <p>Posterior auricular</p> <p>Superficial temporal</p> <p>Maxillary</p> <p>o If required, indicate not all are visible</p>	<p>Need all 3 borders of each to pass</p> <p>Need all 3 borders to pass</p> <p>2 branches to pass</p>
<p>Question 5</p> <p>Discussion</p> <p>Dermatomes</p>	<p>What are the dermatomes of the upper limb?</p> <p>Prompt to demonstrate on own arm</p> <p>What is the peripheral nerve supply to the skin of the hand? (Forearm as bonus)</p>	<p>C 3,4: base of neck, lateral over shoulder</p> <p>C5: lateral arm</p> <p>C6: lateral forearm and thumb</p> <p>C7 middle and ring(or mid 3) fingers and middle post surface of limb</p> <p>C8: Little finger, medial hand and forearm</p> <p>T1: mid forearm to axilla</p> <p>T2: small part of arm and axilla</p> <p>Forearm: Post cut n of forearm, from radial &gt; post forearm. Med cut n of forearm from medial cord of B plexus &gt; ant and medial forearm. Lat cut n of forearm, from musculocut &gt; lat forearm</p> <p>Hand: Radial &gt; base of thumb and lateral dorsum of hand. Ulnar &gt; ulnar 1 1/2 fingers and palm. Median &gt; radial palm and 3 1/2 fingers inc post tips of these.</p>	<p>Need 5 correct to pass</p> <p>Need to name all 3 nerves to hand and reasonable distribution.</p>

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Question 1: Xray Chest	Please demonstrate mediastinal borders on this X-ray	Aortic arch, SVC, Right atrium, Right ventricle, Pulmonary trunk, Left auricle, Left ventricle	Six to pass
Question 2: Bone skull	Please describe the surface anatomy of the heart.  Demonstrate the bones that make up the orbit.  What are the names of these anatomical features?(pointing to sup and inf orbital fissures)  What structures pass through the superior orbital fissure?  Demonstrate the course of the infra orbital nerve and its' distribution.	<p>Left 2<sup>nd</sup> costal cartilage, Right 3<sup>rd</sup> costal cartilage, Right 6<sup>th</sup> costal cartilage and 5<sup>th</sup> ICS in left Midclavicular line</p> <p>Roof: Frontal Lateral: Frontal process of zygoma Medial: Ethmoid, Lacrimal Floor: Maxilla Posterior: Sphenoid, palatine</p> <p>Superior and inferior orbital fissures</p> <p>Sup: Ophthalmic N(V1), III, IV, VI, sympathetic fibres and ophthalmic veins.</p> <p>Continuation of maxillary n(V2). Enters the orbit via infraorbital fissure &gt; infraorbital groove. Exits through infraorbital foramen. Distribution to cheek, lower lid, lateral nose, upper lip and gums and antero/inf nasal septum</p>	<p>Overall correct position to pass (allow 1 space difference for each location)</p> <p>To pass – Frontal, zygoma, maxilla</p> <p>Both to pass</p> <p>III,IV, VI to pass</p> <p>All of continuation of V2, exits infraorbital foramen, sensory to cheek and upper teeth to pass</p>
Question 3: Model: Cubital fossa	Demonstrate the boundaries of the Cubital fossa  Contents:  Describe the course of the brachial artery as it passes through the arm (pull off both upper forearm muscles from model)	<p>Lateral: medial border of brachioradialis Medial: Lat border of pronator teres Superior: Line between 2 epicondyles of humerus Floor: brachialis Roof: skin, deep fascia reinforced by bicipital apon.</p> <p>Med to lat. : median n, brachial art., biceps tendon, radial n deep to brachioradialis</p> <p>From lower border of teres major(cont. of axillary art) to neck of radius. Medial to humerus &gt; bicipital groove, post to biceps, anterior to triceps medial head. Comes to lie on brachialis as descends to cubital fossa. Median nerve crosses anteriorly. Ulnar nerve a post</p>	<p>To pass lateral, medial and floor</p> <p>To pass – median nerve, brachial artery and biceps tendon To pass – continuation of axillary artery, Division over proximal radius into ulna and radial artery, median nerve crosses.</p>

<p>Question 5:</p>	<p>1. What are the different parts of the diaphragm.</p> <p>2. What are their attachments?</p> <p>3 How is the nerve supply of the diaphragm?</p> <p>4 How does contraction of the diaphragm result in ventilation of the lungs?</p>	<p>relation in the upper arm</p> <p>1. Costal muscular portion, Crural (lumbar) portion, Central tendinous portion</p> <p>2. Costal portion attaches to lower 6 ribs and costal cartilages Crural portion attaches to L1-3 bodies, anterior longitudinal ligament and IV discs Central tendinous portion attaches to costal portion and inferior fibrous pericardium and falciform ligament</p> <p>3. Phrenic nerves – only motor nerve to costal and crural portions, sensory to central tendon (and adjacent pleura, pericardium and peritoneum) Separate innervation of R+L sides Separate innervation of crural and costal portions Lower 6 intercostal nerves are sensory for costal portion.</p> <p>4. Descent in inspiration causes increase in superior – inferior thoracic volume Diaphragmatic contractions responsible for 75% of inspiratory respiratory muscle action</p>	<p>To pass - name at least Tendinous and Costal portions</p> <p>2 Identify costal portion attaches to lower ribs and tendinous portion.</p> <p>3 Identify that phrenic nerves are only motor supply to diaphragm. (C3-5 +/-1)</p> <p>Bonus question</p>
<p>Question 5:</p>	<p>Describe the superficial boundaries of the popliteal fossa</p> <p>Using this photo demonstrate the contents?</p> <p>What is the distribution and supply of the common fibular nerve/</p>	<p>Superiorly: biceps femoris 1, semitendinosus 14 and semimembranosus 13 Inferiorly : lat 5 and med 6 heads of gastrocnemius Popliteal vessels 10&amp;11 Small saphenous vein 15 Tibial 19 &amp; common fibular 2 nerves Lymph nodes and lymphatics Superficial fibular nerve lateral compartment Antero lat leg and foot Deep fibular nerve ant comp and dorsum foot Skin b/w great &amp; 2nd toe</p>	<p>To pass – biceps, one of the semis, both heads of gastrocnemius</p> <p>To pass – Common fibular nerve, Tibial nerve, Popliteal artery and vein</p> <p>To pass – weakness of dorsiflexion and inversion</p>