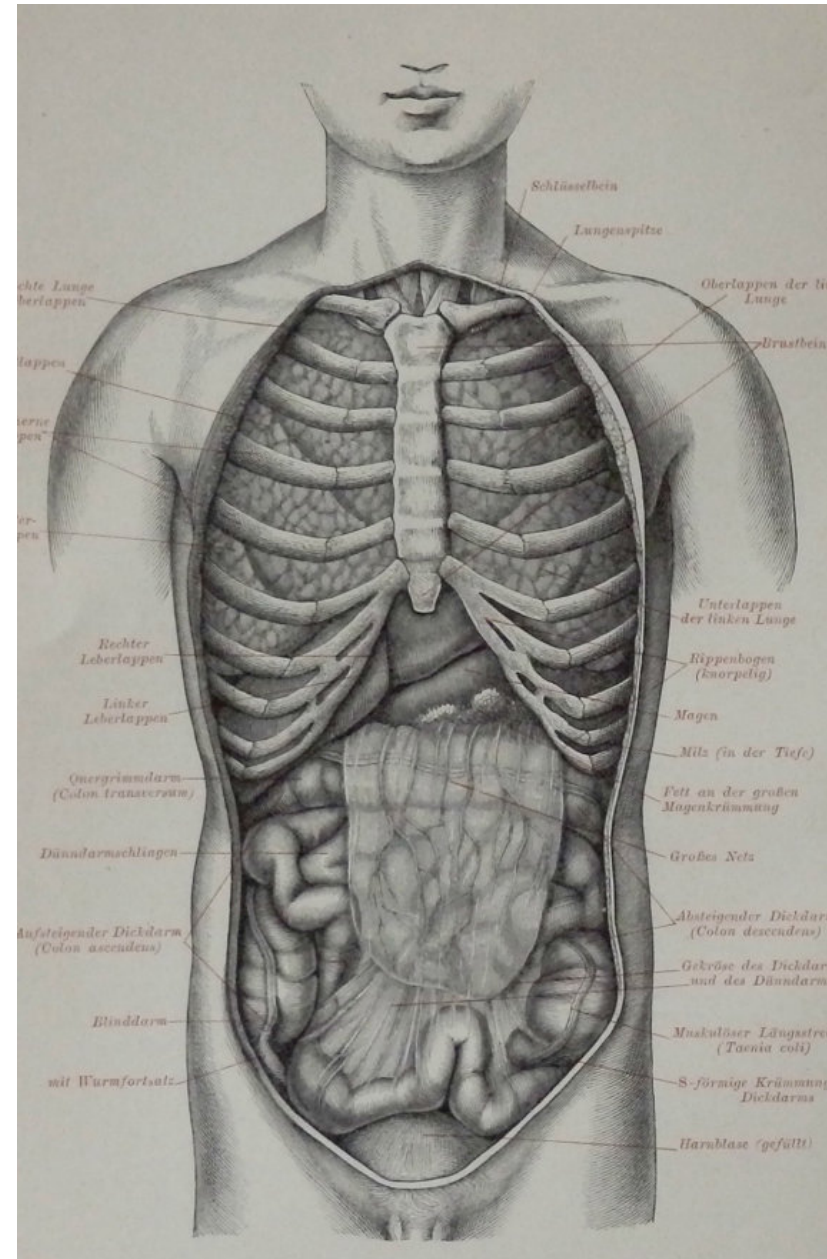


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Aorta 2017-1-B

<b>Stem:</b> Moving onto Anatomy. A CT scan is performed			
<b>Question 5</b> Aorta  <b>Subject:</b> Anat  LOA: 1	a) Describe the structures on this CT (Axial image from Anatomy prop inventory)          b) Describe the course of the thoracic aorta? Name anatomical relations.	<b>Liver</b> , portal vessels, <b>R kidney</b> (top), <b>aorta</b> , <b>L kidney</b> , spleen, splenic vein, bowel loops, <b>pancreas</b> , IVC, vertebra, ribs, paravertebral muscles, intercostal and abdominal muscles, fat, skin  <b>Ascending aorta: begins at aortic orifice.</b> <b>Arch</b> of the aorta: begins behind 2 <sup>nd</sup> sternocostal jt. Passes supero-posteriorly and to the left anterior to the right pulm art and the carina. The apex of the arch lies to the left of the trachea/oesophagus and descends posterior to the left lung root, ending back at the level of the T4 (2 <sup>nd</sup> sternocostal joint.) <b>Descending aorta:</b> Origin is at the left side at level of the T4 vertebra. It courses inferiorly to the level of T12. It approaches the midline as it descends alongside the oesophagus. At the inf border <b>T12</b> it <b>exits through the aortic hiatus</b> and becomes the abdominal aorta	5 Bold + 2 others          Bold

Chest tube 2006-1

**TOPIC:** Intercostal tube \_\_\_\_\_ **NUMBER:** Th PM

OPENING QUESTION	What are the surface landmarks for the insertion of anterior and lateral intercostal tubes	COMMENTS
POINTS REQUIRED	2 <sup>nd</sup> intercostal space in the mid clavicular line	Could know
	4 <sup>th</sup> or 5 <sup>th</sup> intercostal space just anterior to the mid axillary line	Must know
PROMPTS		
SECOND QUESTION (if needed)	What are the layers traversed when inserting lateral chest wall?	
POINTS REQUIRED	1 Skin & subcutaneous tissue	
	2 Layers of muscle (3 layers)	
	3 Parietal Pleura	1, 2 & 3 to pass
	4.	
	5.	
	6	
PROMPTS		
THIRD QUESTION (if needed)	Where do the intercostal vessels run?	
POINTS REQUIRED	Under the rib above	Must know
	Between the middle and innermost intercostal muscles	Must know
	There is also collateral insignificant vessels at the lower section of the intercostal space	Could know

## Clavicle 2009-1

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Question 1:	This is a right or left clavicle. Demonstrate the muscular attachments this bone	Deltoid – lateral 1/3 anterior Trapezius – lateral 1/3 posterior Pectoralis Major – medial 1/3 anterior - inferior Sternocleidomastoid – clavicular head, medial 1/3 ant - superior Subclavius – inferior, middle 1/3 (medial according to text)	Name all except subclavius <b>and</b> locate trapezius as posterior, SCM as anterior and deltoid as lateral attachments.
Question 2:	What are the anatomical relations of the medial third of the clavicle.	Medial: Sternoclavicular joint, manubrial notch Posterior: First rib, brachiocephalic vein (medial to scalenus anterior), internal jugular vein, subclavian vein (over scalenus anterior), subclavius, phrenic nerve (more posterior) Apical pleura, thoracic duct (left) Anterior/superior / inferior: Subcutaneous tissue, skin	Brachiocephalic <b>or</b> Subclavian vein <b>and</b> name 2 others to pass
Question 3:	Describe the course of the subclavian vein	Becomes subclavian vein from axillary vein medial to the outer border of the first rib. Courses medially posterior to clavicle, superior to flat section of first rib (groove). Lies immediately anterior to Scalenus anterior which separates it from the Subclavian artery. Becomes brachiocephalic vein at medial border of Scalenus Anterior when it joins the IJV.	Originates from Axillary vein <b>and</b> becomes Brachiocephalic vein <b>and</b> demonstrates course posterior to clavicle to pass.

CXR 2016-2-B

<b>Stem:</b> Moving on to Anatomy. A CXR is performed.			
<b>Question 5</b> CXR (mediastinal structures and boundaries)  <b>Subject:</b> Anat LOA: 1	Outline the structures that make up the right and left cardiomedastinal borders on this X-ray (you can point on the Xray)	Right <ul style="list-style-type: none"> <li>- Right brachiocephalic vein</li> <li>- Superior vena cava</li> <li>- Right pulmonary trunk</li> <li>- Right Atrium</li> <li>- Inferior vena cava</li> </ul> Left <ul style="list-style-type: none"> <li>- Left subclavian artery/left brachiocephalic vein</li> <li>- Aortic arch</li> <li>- Left pulmonary trunk</li> <li>- Left atrial appendage</li> <li>- Left Ventricle</li> </ul>	6/10 to pass
	Describe the lobes of the lungs and their fissures.	<b>Both lungs: oblique fissures</b> separate upper and lower lobes (T2 posteriorly to 6 <sup>th</sup> costal cartilage ant)	Bold to pass
		<b>Right lung</b> – upper and middle lobes separated by the <b>transverse fissure</b> (at level of right lung hilum along line of 4 <sup>th</sup> rib)	Bold to pass
	Which part of the lung forms the right heart border?	Left lung – prominent cardiac notch in lower lobe  <b>RML</b>	Bold

CXR 2016-1-B

Stem: Moving onto Anatomy.			
<b>Question 5</b> Chest X-ray with focus on lung and pleura LOA: 1	<i>a. Describe the expected positions of the fissures of the lung on a normal CXR.</i>	Right lung has 3 lobes, left 2 lobes. Oblique fissures separate upper from lower lobes, horizontal fissure separates the right upper and middle lobes. <b>Oblique fissures</b> follow the 5 <sup>th</sup> ribs (run from 4th thoracic vertebrae to 3 cm posterior of the junction between the diaphragm and the sternum on the left, and to the sternodiaphragmatic junction on the right). <b>Horizontal fissure on right</b> at level of 4 <sup>th</sup> costal cartilage or hilum.	Bold (within 1 space either way)
	<i>b. Describe the position of the neurovascular structures in the intercostal space.</i>	Between the middle and innermost layers, protected by the <b>costal groove of the superior rib of each intercostal space. Ordered vein, artery, nerve from superior to inferior.</b>	Bold
	<i>c. When placing an intercostal catheter (ICC) in the 5<sup>th</sup> intercostal space laterally, what anatomical structures are traversed?</i>	Skin -> subcutaneous tissues -> <b>external intercostal</b> muscle -> <b>internal intercostal</b> muscles -> <b>innermost intercostals</b> -> parietal pleura.	2 bold
	<i>d. What structures may be at risk from an ICC inserted laterally?</i>	<b>Neurovascular bundle; long thoracic nerve</b> (lies in serratus anterior behind the mid axillary line); <b>lung, diaphragm, pericardium/heart</b> and spleen if on the left; <b>liver</b> if on right.	2 bold

CXR 2016-1-A

<b>Stem: Moving onto Anatomy</b>			
<b>Question 2</b> Lobes of the lung Mediastinum and cardiac borders (CXR) <b>Subject:</b> Anat LOA: 1	a) What structures make up the mediastinal contours?  (you can point to the CXR if you want)	<b>Right:</b> R Brachiocephalic v, SVC, R pulmonary trunk , R atrium  <b>Left:</b> Aorta, Pulm trunk, L atrium, L Ventricle	<b>Bold required</b> Plus one other
	b) Which lobes of the lung lie adjacent to the right and left cardio-mediastinum?  Prompt : Which part of the lung forms the right heart border? etc	Right upper mediastinum - right superior lobe <b>Right heart border</b> - <b>right middle lobe</b> Left upper mediastinum - left superior lobe <b>Left heart border</b> - <b>left superior lobe (lingula segment)</b>	<b>Bold required</b>



CXR 2015-2-A

<b>Stem:</b> An 80 year old man who is on warfarin is brought in following a motor vehicle accident in which he sustained multiple injuries. On arrival in ED, his blood pressure is 80/40 and pulse rate is 130 / minute. A chest X-ray is done.			
TOPIC	QUESTIONS	KNOWLEDGE ( <b>essential in bold</b> )	NOTES
<b>Question 1</b> <b>Clinical Building</b> <b>Block:</b>	Please describe the abnormalities on this CXR	<b>Surgical emphysema, Pneumothorax</b> , RML changes ? consolidation or contusion	Bold to pass

CXR 2014-2-C

<b>Stem: We are now moving to anatomy. A CXR is performed.</b>			
<b>Question 2</b> CXR including understanding of pleural reflections  <b>Subject:</b> Anat <b>LOA:</b> 2	1. Demonstrate the lobes of the lungs  2. What are their immediate relationships (if not answered in Q1) Prompt: what are the boundaries of the lobes	<b>Right superior mediastinum to apex ; right upper lobe</b> RUL: apex -horizontal fissure /upper right mediastinum medially <b>Right heart border; right middle lobe</b> RML: right heart border & horizontal fissure (superior border 4 <sup>th</sup> rib) to 6 <sup>th</sup> costal cartilage  <b>Left upper mediastinum to apex; left upper lobe</b> LUL: Apex- 4LICS parasternal line, 6 <sup>th</sup> LICSMCL & 5 <sup>th</sup> LICS AAL <b>Left heart border ; Lingula lobe :</b> left heart border <b>Lower lobes posteriorly, sit over domes of diaphragms</b> rise as high as 3 <sup>rd</sup> intercostal space posteriorly R & L lower lobes: from Obliques fissures (T2 spinous process-6 <sup>th</sup> costal cartilage anteriorly) to level T10 spinous process posteriorly , 10 <sup>th</sup> ribs at scapular line & 8 <sup>th</sup> ribs in MAL.	<b>Demonstrate all 5 lobes</b>
	3. Describe the surface anatomy of the parietal pleura	supraclavicular fossa, medially follow the middle of the sternum to the level of the 6 <sup>th</sup> intercostal cartilage, deviates laterally reaching MCL at 8 <sup>th</sup> rib, MAL at the 10 <sup>th</sup> rib, paravertebral line 12 <sup>th</sup> rib. Notch on Left.	<b>Reasonable description</b>

CXR 2014-1-A

<b>Stem:</b> An 80 year old woman is transferred to your ED following a motor vehicle accident 12 hours ago, where she sustained serious chest injuries. <b>We are starting with Anatomy.</b>			
TOPIC	QUESTIONS	KNOWLEDGE (essential in bold)	NOTES
<b>Question 1</b> Chest X-ray <b>Subject:</b> Anat LOA: 2	1. Outline the structures that make up the cardiomeastinal borders on this normal X-Ray	Right: <b>R Brachiocephalic v, SVC, R Pulmonary Artery, R Atrium, IVC</b> Left: <b>Aorta, L Pulmonary Trunk/Artery, L Atrium, L Ventricle</b>	6 Bold to pass
	2. Which parts of the lungs lie adjacent to the cardiomeastinum?	Right upper mediastinum: <b>R superior lobe</b> Right heart border: <b>R middle lobe</b> Left upper mediastinum: <b>L superior lobe</b> Left heart border: <b>Lingula segment of L superior lobe</b>	RML plus one other
	3. In this patient, what injuries may be seen on a CXR? (Prompt: the patient has sustained blunt trauma)	<b>Chest wall:</b> # ribs, clavicle, sternum <b>Lung:</b> pneumothorax, haemothorax, contusion, <b>Cardiovascular:</b> aorta, other vessels (widen mediastinum)	1 example from each bold category to pass

## CXR 2012-1

TOPIC	QUESTIONS	KNOWLEDGE (essential in bold)	NOTES
Question 1:  CXR Borders of heart, lung anatomy LOA: 2	a) Identify the structures that make up the mediastinal contours on this CXR  b) Describe the lobes of the lungs and their fissures.  (note: these may not be actually visible on the CXR we have, but candidates can show where they would be..)	Right: R Brachiocephalic v, SVC, R pulmonary trunk , R atrium Left: Aorta, Pulm trunk, L atrium, L Ventricle  Both lungs: <b>upper and lower lobes are separated by the oblique fissure</b> (from T2 posteriorly to 6 <sup>th</sup> costal cart anteriorly). <b>On the right the upper and middle are separated by the transverse fissure</b> ( at level of R lung hilum along line of 4 <sup>th</sup> rib) Left lung – prominent cardiac notch in lower lobe.	Pass criteria: At least 6 of <b>bolded</b> to pass?  <b>All bold</b>

## CXR 2011-2

<p><b>Q 1 :</b></p> <p><b>X-Ray: Chest</b></p> <p><b>LOA 1</b></p>	<p>i. <i>Outline the structures that make up the right and left cardiomedastinal borders on this X-Ray</i></p>	<p>Right</p> <ul style="list-style-type: none"> <li>- Right brachiocephalic vein</li> <li>- Superior vena cava</li> <li>- Right pulmonary trunk</li> <li>- Right atrium</li> <li>- Inferior vena cava</li> </ul> <p>Left</p> <ul style="list-style-type: none"> <li>- Left subclavian artery / left brachiocephalic vein</li> <li>- Aortic arch</li> <li>- Left pulmonary trunk</li> <li>- Left atrial appendage</li> <li>- Left ventricle</li> </ul>	7/10
	<p>ii. <i>Which corresponding part of the lungs lie adjacent to the right and left cardiomedastinum</i></p> <p><i>Prompt : Which part of the lung forms the right heart border? etc</i></p>	<p>Right upper mediastinum</p> <ul style="list-style-type: none"> <li>- right superior lobe</li> </ul> <p>Right heart border</p> <ul style="list-style-type: none"> <li>- right middle lobe</li> </ul> <p>Left upper mediastinum</p> <ul style="list-style-type: none"> <li>- left superior lobe</li> </ul> <p>Left heart border</p> <ul style="list-style-type: none"> <li>- left superior lobe (lingula segment)</li> </ul>	2/4
	<p>iii. <i>Which part of the heart lies immediately behind the sternum (Prompt : What forms the anterior surface of the heart)</i></p>	<p>RV (RA)</p>	<b>Bold to pass</b>

## CXR 2010-2

<b>Question 1:</b>  <b>Soft tissues on CXR</b>	Demonstrate the borders of the mediastinum on this Xray	SVC RA RV (Apex) (L ventricle) L Auricular appendage Pulmonary trunk Aorta R brachiocephalic v.	At least 6 correct to pass
Structures transected at the sternal angle	In the supine position, which mediastinal structures are located at the same level as the sternal angle. (Prompt: What mediastinal structures would you see if you looked at a transverse slice through the chest at the level of T4-5?)	<b>Mediastinal structures</b> Carina (bifurcation) Division of pulmonary trunk Reflection of the pericardium SVC (enters R atrium) Hila of the lungs Transverse fissure of R lung Ascending aorta becomes arch Arch becomes descending Aorta Phrenic nerve Vagus nerve L recurrent laryngeal nerve origin Azygos vein Thoracic duct (crosses from R to L) Pleura approaches the midline anteriorly	At least 6 correct to pass

CXR 2008-2

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
	Please describe the surface anatomy of the heart.	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	Overall correct position to pass (allow 1 space difference for each location)



CXR 2007-1

OPENING QUESTION	Demonstrate the structures that make up the mediastinal contours	COMMENTS
<b>POINTS REQUIRED</b>	1) Sup VC	5 of 7 to pass
	2) R atrium	
	3) bit of IVC	
	4) R Ventricle	
	5) L Ventricle	
	6) L atrium	
	7) Aorta	
<b>PROMPTS</b>	Trace pointer round the contour, and ask 'what structures are making this edge?'	
<b>SECOND QUESTION (if needed)</b>	Point to diaphragms: Ask: what is this structure, and what are its attachments?	Adequate concept for pass
<b>POINTS REQUIRED</b>	1) Crura R is fixed to upper 3 lumbar vert, and discs between, L is attached to upper 2. R crus fibres slope up to L and surround oesoph	
	2) Median arcuate lig is fibres from medial edge of each crus that unite with each other in front of aorta at T12	
	3) Medial arcuate is thickening of psoas fascia, from L1/L2 vert to a ridge on transverse process of L1	
	4) Lat arcuate lig starts from transverse process and goes to 12th rib lat to quad lumb	
	5) Digitation from the tip of 12 <sup>th</sup> - 7 <sup>th</sup> rib/costal cart	
	6) in front, fibres that pass backward from the Xiphisternum	
	7) may also say it is attached to IVC and pericardium	
<b>PROMPT</b>	Where does it attach at the front, sides, back?	
<b>THIRD QUESTION (if needed)</b>	What are the openings in the diaphragm	Only need to know 2 of big 3
<b>POINTS REQUIRED</b>	1) Aortic opening at T12, midline..also transmits azygos vein and thoracic duct	
	2) Oesophageal opening at T10, 2.5 cm to L of midline, surrounded by sling from r crura..vagal trunks, L gastric art and vein, and lymphatics	
	3) Vena caval foramen is at T8, just to r of midline. R phrenic is alongside.	
	4) Others include splanchnic nerves, sympathetic trunk, subcostal nerve and vessels, L phrenic, neurovasc bundles of 7-11 intercostal spaces, superior epigastric vessels	
	5	
	6	
<b>PROMPTS</b>		



CXR 2005-1

**TOPIC:** CXR \_\_\_\_\_ **NUMBER:** 2-1 \_\_\_\_\_

<b>OPENING QUESTION</b>	Identify the mediastinal structures visible on this chest xray	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1 trachea	7 of 10 to pass
	2 carina	
	3 SVC	
	4 RA/RV/LA/LV	Must get inf border
	5 aortic arch	
	6 pulm trunks	
	7 IVC	
<b>PROMPTS</b>	What about the Inferior border of Heart	
<b>SECOND QUESTION (if needed)</b>	Describe the surface markings of the pleura	5 of 8 to pass
<b>POINTS REQUIRED</b>	1 3cm above clavicle	
	2 comes together T2	
	3 diverges T4 left, T6 right	
	4 MCL T8 MAL T10 12 <sup>th</sup> rib T12	
	5 Lung edge is 2 rib levels higher	
	6	
<b>PROMPTS</b>		

CXR 2003-1

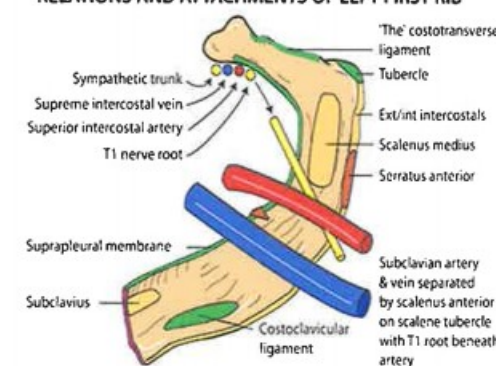
**TOPIC:** CHEST X-RAY \_\_\_\_\_ **NUMBER:** 1 AM \_\_\_\_\_

<b>OPENING QUESTION</b>	Q1: IDENTIFY THE MEDIASTINAL STRUCTURES VISIBLE IN THIS CHEST X-RAY.	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1 TRACHEA	6 TO PASS
	2 CARINA	
	3 SVC, RA, RV, LA, LV	
	4 ARCH	
	5 PULM TRUNKS	
	6 IVC	
	7	
<b>PROMPTS</b>	“WHAT STRUCTURES MAKE UP THE BORDERS OF THE HEART”	
<b>SECOND QUESTION</b> (if needed)		
<b>POINTS REQUIRED</b>	1	
	2	
	3	
	4	
	5	
	6	
<b>PROMPTS</b>		

Diaphragm 2008-2

<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>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>
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First rib 2015-2-C

Stem: Moving onto Anatomy. Chest X-ray shows multiple rib fractures.			
<p><b>Question 3</b></p> <p>First rib</p> <p><b>Subject:</b> Anat</p> <p>LOA: 1</p>	<p>1. Please identify this bone and demonstrate its features (<b>bold to pass</b>)</p> <p>Prompt: What's this? (scalene tubercle)</p> <p>2. What are the important relations?</p>	<p><b>First rib</b></p> <p>Head/neck/shaft/ tubercle (articulates with TP of T1) /articulation with costal cartilage to manubrium /<b>groove for subclavian vein (ant) and artery (posterior to scalene tubercle)</b></p> <p><b>Apex of lung</b></p> <p><b>Subclavian vessels</b>, intercostal vessels &amp; ns</p> <p>Sympathetic trunk</p> <p>Lower trunk of brachial plexus (sup.)</p> <p>Scalenus ant/ medius Intercostals, Serratus anterior, Subclavius</p>	<p><b>RELATIONS AND ATTACHMENTS OF LEFT FIRST RIB</b></p>  <p>The under surface of the 1st rib is smoother. When the rib is laid on a flat surface, the head touches the flat surface when the rib is the correct way up</p>

## First rib 2010-1

<p>Question 2:</p> <p>Bone: First rib</p>	<p>a. What bone is this?</p> <p>PROMPT: What side is it from?</p> <p>b. What are the bony landmarks?</p> <p>PROMPT: What vessels are related to this bone?</p> <p>c. What muscles attach to this bone?</p>	<p>a. First rib</p> <p>Appropriate side</p> <p>b. Landmarks</p> <ul style="list-style-type: none"> <li>• Head (with single facet for T1)</li> <li>• Neck</li> <li>• Tubercle for transverse process of T1</li> <li>• Superior surface, medial to lateral:             <ul style="list-style-type: none"> <li>◦ Groove for subclavian artery</li> <li>◦ Scalene tubercle and ridge</li> <li>◦ Groove for subclavian vein</li> </ul> </li> <li>• Costal groove</li> </ul> <p>c. Muscles</p> <ul style="list-style-type: none"> <li>• Anterior scalene (tubercle)</li> <li>• Middle scalene (medial to groove for artery)</li> <li>• Longissimus portion of erector spinae attaches between tubercle and angle</li> <li>• Intercostals</li> <li>• Subclavius (at costochondral jn)</li> <li>• Serratus anterior (lateral)</li> </ul>	<p>a. Need all bold to pass</p> <p>b. Need all bold to pass</p> <p>c. Need all bold to pass</p>
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## First rib 2007-1

<b>OPENING QUESTION</b>	What is this bone? What are some of its features?	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1) First rib	3 out of 6
	2) Head, neck, shaft, tubercle (T1 trans process)	
	3) Groove for subclavian art ( which actually contains lower trunk of brachial plexus)	
	4) Scalene tubercle (sc ant)	
	5) Groove for subclavian vein	
	6) End attaches to first cost cart.	
	7)	
<b>PROMPTS</b>		
<b>SECOND QUESTION</b> (if needed)	What are the neurovascular relations of this bone?	Adequately address vessels and nerves
<b>POINTS REQUIRED</b>	1) Nerves are C8-T1 above and below neck, sympathetic trunk in contact with neck next to head, underneath the first intercostal neuro bundle, in groove for subclav art is lower trunk of brachial plexus.	
	2) Vessels are subclav art touching outer border of rib, subclav vein, and under is bundle of first intercostal space	
<b>THIRD QUESTION</b> (if needed)	When performing a needle thoracostomy through a lateral intercostal space, what layers are passed through?	5 out of 6
<b>POINTS REQUIRED</b>	1) Skin	
	2) Subcut fat	
	3) Ext intercostal	
	4) Int intercostal	
	5) transversus	
	6) Parietal pleura	
<b>PROMPTS</b>		

First rib 2005-2

**TOPIC:** First rib: Reltnshps of nerves & vessels \_\_\_\_\_ **NUMBER: 1.3** \_\_\_\_\_

OPENING QUESTION	What bone is this? Please demonstrate its bony features.	COMMENTS
POINTS REQUIRED	1 <sup>st</sup> rib	essential
	1 head, 2 neck, 3 scalene tubercle, 4 shaft, 5 tubercle, 6 grooves for subclavian artery and vein	4/6 to pass
PROMPTS	For each item if not mentioned	
SECOND QUESTION	What are the muscle attachments ?	
POINTS REQUIRED	From back, 1 serratus anterior	Scalenus ant and 1 other
	2 scalenus medius	
	3 scalenus ant (onto scalene tubercle b/w subclav art & vein)	
	4 subclavius (onto costochond jnctn)	
THIRD QUESTION	Which structures are related to it ?	
POINTS REQUIRED	1 Symp trunk/cervicothor gang (in contact with ant border neck of rib)	All 4 * to pass
	2 1 <sup>st</sup> post intercost vein & sup intercost art (Lat to head)	
	3 T1 n root<neck & C8 n root*>neck > inf trunk brachial plexus	
	4 Dome of pleura/apex lung* (hold nn & vv against front of neck of rib)	
	5 From back, scal med, subclav art*, inf brach plex above, scal ant, subclav v*	

## Great Vessels 2004-2

**TOPIC:** Heart \_\_\_\_\_ **NUMBER:** 2.3 \_\_\_\_\_

OPENING QUESTION	Identify the great vessels on this model	COMMENTS
POINTS REQUIRED	1 Aorta – ascending, arch, descending	
	2 Brachiocephalic trunk	
	3 L Common Carotid	
	4 L Subclavian	
	5 SVC	
	6 L & R Pulmonary Arteries	
	7 Pulmonary Veins - paired	
PROMPTS		
SECOND QUESTION (if needed)	Identify the Ligamentum Arteriosum What is the role of the ductus arteriosus in the foetus?	
POINTS REQUIRED	1 Bypasses Lungs – deoxygenated blood from head – BCVs – RA – RV – Pulmonary Trunk – DA – Aorta – Umbilical Artery - Placenta - Reoxygenated	
	2	
	3	
	4	
	5	
	6	



Heart 2017-1-C

Stem: Moving on to Anatomy			
<b>Question 3</b> Heart (model)  <b>Subject:</b> Anat  LOA: 2	a) Demonstrate on this model the arterial supply of the heart. (Prompt - can you name the main branches of the coronary arteries?)  b) Occlusion of which vessel would result in an anterolateral STEMI? c) Describe the venous drainage of the heart? Prompt; What is the final common venous tributary that empties into the heart called?	<b>a) Right coronary artery</b> - gives off SA nodal branch (60%), right marginal branch, AV nodal branch, posterior interventricular 2/3, inter ventricular septal. <b>Left coronary artery</b> - gives off <b>circumflex artery</b> which branches to give the SA nodal artery in 40%, left marginal artery, posterior interventricular (15%). Left coronary artery - gives off <b>LAD</b> which supplies anterior 2/3 septum, lateral diagonal. b) Proximal LAD (before first diagonal branch)  c) <b>Coronary sinus (6)</b> , Great cardiac veins (accompanies LAD then LCX), Middle cardiac veins (accompanies PIV), Small cardiac veins (accompanies R marginal), Left posterior ventricular, Left marginal, Anterior cardiac (start ant. surface RV, drain straight into R atrium), Oblique veins on left atrium, Venae cordis minimae (drain direct into chambers)	Bold to pass   LAD   Coronary sinus plus one other to pass

Stem: Moving onto Anatomy			
<b>Question 5</b> Heart (model) – coronary supply  <b>Subject:</b> Anatomy LOA: 1	1. Using the model, identify the great vessels which enter and exit the heart	Ascending <b>aorta</b> <b>Superior vena cava, IVC</b> <b>Pulmonary trunk / pulmonary arteries</b> <b>Pulmonary veins</b>	<b>(Bold to pass)</b>  Prompt - point
	2. Identify the arteries that supply of the heart	Coronary arteries arise from the aortic sinuses <b>Left (Main) Coronary artery</b> <b>Left anterior descending</b> Diagonal branches <b>Circumflex</b> Marginal arteries <b>Right Coronary artery</b> Posterior descending (interventricular) artery	<b>Bold + 1 to pass</b>  Prompt to LCA, where does the LAD arise from?
	3. Which areas of the heart are supplied by the Left Coronary Artery and its branches?	Most of left atrium Most of <b>left ventricle</b> Part of right ventricle (anterior wall) <b>Interventricular septum</b> Ventricular apex <b>AV Bundle (His)</b> SA node in 40% (from circumflex)	<b>Bold + 1 to pass</b>  prompt - What part of the conducting system does it supply?
	BONUS Q: Describe the position of the heart in the left Hemithorax	Inferior border lies on the diaphragm Apex is in the 5 <sup>th</sup> intercostal space Base is against the thoracic vertebrae (T6 –T9)	

Heart 2015-2-A

<b>Stem: Moving on to anatomy</b>			
<b>Question 5</b> Heart Model <b>Subject:</b> Anat LOA: 1	1. Using the model identify the great vessels and branches which enter and exit the heart	<b>Superior vena cava</b> - R brachiocephalic v, L brachiocephalic v <b>Inferior vena cava</b> <b>Ascending aorta</b> - brachiocephalic trunk, L common carotid artery, L subclavian artery <b>Pulmonary trunk</b> and pulmonary arteries <b>Pulmonary veins</b>	<b>(bold to pass)</b>
	2. Identify the main coronary arteries and their branches	RCA LCA Circumflex LAD/ant interventricular Marginal	4/5 to pass
	3. Which areas of the heart is supplied by the LCA?	Most of the left atrium <b>Most of left ventricle</b> Part of right ventricle Intraventricular septum <b>AV bundle</b> ( SA node in 40%)	Bold +2 to pass
	4. (If required) Describe the position of the heart in the left hemithorax	Inferior border lies on the diaphragm Apex is in the 5th ICS Base is against the Thoracic vertebrae T6 to T9	

Heart 2015-1-A

Stem: Moving onto Anatomy.			
<p>Question 4 Heart Model Subject: Anat  LOA: 1</p>	Using this model please describe the arterial supply of the heart	<p>Coronary arteries arise from coronary sinuses. <b>L Coronary artery</b> divides into <b>LAD</b> and <b>Circumflex</b>. LAD - diagonal branches. Circumflex – marginal branches. <b>RCA</b> inferior in AV groove – SA nodal, AV nodal, marginal, posterior IV (2/3).</p>	<b>Bold + 1 other</b>
	What does the Right Coronary artery supply?	RA, most of RV, diaphragmatic (inferior) part of LV, post 1/3 IV septum, SA node in 60%, AV node in 80%	3/6 to pass
	Describe the cardiac conduction system.	<b>SA Node</b> – Junction of SVC and RA. <b>AV Node</b> – Postero-inferior AV septum near coronary sinus. AV bundle of His. Left and Right Bundles	<b>Bold + 1 other</b>

<p>Question 3 <b>ANATOMY</b> LOA: 1</p> <p>Heart model assembled</p> <p>(Take the model back!)</p>	1. Identify the arterial supply of the heart	<p>1. L+R coronary arise from corresponding aortic sinuses above AV</p> <p><b>R coronary</b> courses inf in AV groove. Gives off branches to SA node, Marginal, Post interventric, and AV nodal</p> <p><b>L coronary</b> bifurcates into <b>Circumflex</b> and <b>LAD</b> (anterior I – V art), then Cx gives off Marginal branch, and LAD gives off diagonals.</p>	<b>bold to pass</b>
	2. What does the R Coronary artery supply?	2. R atrium, most of RV, Diaphragmatic surface LV Post 1/3 septum, 60% SA, 80% AV	3 out of 6 to pass
	3. Describe the venous drainage of the heart	<p>3. Major drainage is via the <b>Coronary sinus</b></p> <p>3 main tributaries are:</p> <p>Great cardiac vein (accompanies LAD, then Cx)</p> <p>Middle (accompanies PIV)</p> <p>Small cardiac veins (accompanies R marginal). Oblique vein L atrium marks start of sinus.</p> <p>Ant cardiac vn's start ant surface RV, drain straight into R atrium Smallest cardiac vn's (venae cordis minimae) drain direct into chambers</p>	<b>bold +2</b>
	4. Describe the major components of the conducting system	<p>4. SA Node                      junction of SVC &amp; RA</p> <p>AV Node                      near coronary sinus-postero-inferior interatrial septum</p> <p>AV Bundle</p> <p>R &amp; L Bundles</p>	3 of 4

Heart 2013-1

<p><b>Question 3</b> Photo Left Lung Root/Mediastinum (Describe Structures)</p>	<p>This is a longitudinal section through the hilum of the left lung. What structures can you identify?</p> <p>What are the branches of the aortic arch</p>	<p><b>23,Heart (LV), 26, pericardium, 3,32 aorta, 18 L subclavian art, 4 L costocx trunk,12 L internal thoracic art,10 L common carotid,22 vagus n, 16 L pulm art, 15 L main bronchus, 11,21 pulm vv,9 L brachioceph v,31 sympathetic trunk, 14 phrenic nerve....</b></p> <p><b>Brachiocephalic trunk (dividing into RCC and RSC), L common carotid and L subclavian</b></p>	<p><b>Bold plus 4 others to pass</b></p> <p><b>Bold to pass</b></p>
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Heart 2012-1

<p>Question 5 Discussion: Blood supply of the myocardium LOA: 2</p>	<p>a)Describe the arterial blood supply of the myocardium. Prompt: Tell me about the coronary arteries.</p> <p>b)What is the blood supply of the conducting system?</p> <p>c)Describe the venous drainage of the heart.</p>	<p>LCA/RCA from aorta. LCA branches into</p> <ol style="list-style-type: none"> <li>1. <b>LAD</b> (or <b>AI</b>)– IV groove to apex, anast with PDA in IV groove. Anterior surface both <b>ventricles</b> + ant 2/3 <b>IV septum</b></li> <li>2. <b>Circumflex</b> – Coronary groove to posterior surface heart. Supplies lat LV. Anast with RCA. PDA in 1/3. (L dominant)</li> </ol> <p>RCA coronary groove. RV, posterior 1/3 IV sept, post. surface, PDA in 2/3 (R dominant)</p> <p>SA node: RCA in 60%. LCA in 40%. AV node: RCA in 80%. LCA in 20%. AV Bundles: LAD in most.</p> <p>Coronary sinus into RA receives from</p> <ol style="list-style-type: none"> <li>1. <i>great cardiac vein: ant IV groove → coronary groove → coronary sinus</i></li> <li>2. <i>middle cardiac vein: Post IV groove → coronary sinus</i></li> <li>3. <i>small cardiac vein: inferior surface → coronary groove → coronary sinus</i></li> </ol> <p><i>Some ant cardiac veins into RA.</i></p>	<p>Must describe 3 vessels in bold and some description of what they supply to pass.</p> <p>SA/AV node: usually by RCA + AV bundles by LCA to pass</p> <p><i>Bonus details</i></p>
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Heart 2010-2

<p><b>Question 1:</b></p> <p><b>Soft tissues on CXR</b></p>	<p>Demonstrate the borders of the mediastinum on this Xray</p>	<p>SVC RA RV (Apex) (L ventricle) L Auricular appendage Pulmonary trunk Aorta R brachiocephalic v.</p>	<p>At least 6 correct to pass</p>
<p>Structures transected at the sternal angle</p>	<p>In the supine position, which mediastinal structures are located at the same level as the sternal angle. (Prompt: What mediastinal structures would you see if you looked at a transverse slice through the chest at the level of T4-5?)</p>	<p><b>Mediastinal structures</b> Carina (bifurcation) Division of pulmonary trunk Reflection of the pericardium SVC (enters R atrium) Hila of the lungs Transverse fissure of R lung Ascending aorta becomes arch Arch becomes descending Aorta Phrenic nerve Vagus nerve L recurrent laryngeal nerve origin Azygos vein Thoracic duct (crosses from R to L) Pleura approaches the midline anteriorly</p>	<p>At least 6 correct to pass</p>





Heart 2008-2

<p>Question 3:</p>	<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 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>
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## Heart 2008-1

<b>OPENING QUESTION</b>	<b>Demonstrate the chambers of the heart and their borders?</b>	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1 Left ventricle	Need to identify chambers to pass
	2 Right ventricle – ant & post interventricular grooves	
	3 Right atrium & auricle	
	4 Left atrium & auricle – coronary groove	
	5 Crux of the heart	Additional information
<b>PROMPTS</b>	Ask candidate to demonstrate on model	
<b>SECOND QUESTION (if needed)</b>	<b>Demonstrate the arterial supply to the heart?</b>	
<b>POINTS REQUIRED</b>	1 RCA – SA nodal – <u>R marginal</u> – AV nodal – <u>post interventricular (2/3)</u> – <u>interventricular septal</u>	Underlined to pass
	2 LCA – <u>circumflex</u> – SA nodal (40%) – <u>L marginal</u> – post interventricular (15%)	
	3 LCA – <u>LAD</u> - ant 2/3 septum – lateral diagonal	
<b>PROMPTS</b>	Ask main branches of RCA & LCA	
<b>THIRD QUESTION (if needed)</b>	<b>Demonstrate the venous drainage of the heart?</b>	
<b>POINTS REQUIRED</b>	1 Coronary sinus	Coronary sinus to pass
	2 Great cardiac veins	
	3 Middle cardiac veins	
	4 Small cardiac veins	
	5 L post ventricular	
	6 L marginal	
	7 Anterior cardiac	
	8 Oblique veins on the L atrium	
<b>PROMPTS</b>	Ask to list veins	

COMMENTS Must pass Questions 1 & 2 to pass overall

Heart 2007-1

<b>OPENING QUESTION</b>	Demonstrate the chambers of the heart?	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1 All 4 chambers	4/4 to pass
	2	
	3	
	4	
	5	
	6	
	7	
<b>PROMPTS</b>	What do you think this structure is (point to SVC)	
<b>SECOND QUESTION (if needed)</b>	What valves are these?	2/2 to pass
<b>POINTS REQUIRED</b>	1 Pulmonary	
	2 Aorta	
	3	
	4	
	5	
	6	
<b>PROMPTS</b>		
<b>THIRD QUESTION (if needed)</b>	Demonstrate the coronary arteries and their branches.	5/6 to pass (must include mandatory)
<b>POINTS REQUIRED</b>	1 R Coronary	Mandatory
	2 L Coronary	Mandatory
	3 R marginal	
	4 Posterior IV	
	5 Anterior IV (LAD)	Mandatory
	6 Circumflex	Mandatory
<b>PROMPTS</b>	If mandatory omitted	

COMMENTS

Heart 2006-1

**TOPIC:** Coronary AA Arterial supply of the conduction system **NUMBER: Fri 1** 3

OPENING QUESTION	On the model, identify the arterial supply of the heart.	COMMENTS
POINTS REQUIRED	1 Right and left coronary arteries	Must know
	2 Right marginal	Must know and 3 of 2,3,4&5 to pass
	3 Posterior IV	
	4 Anterior IV	
	5 Circumflex	
PROMPTS		
SECOND QUESTION (if needed)	Point out the course of <del>the course</del> and branches of the right and left coronary artery.	
POINTS REQUIRED	1 SA nodal artery (RCA) <i>99%</i>	
	2 AV nodal artery (RCA) <i>60%</i>	
	3	
	4.	
	5.	
	6	
PROMPTS		
THIRD QUESTION (if needed)	Describe the arterial supply to the cardiac conduction system	
POINTS REQUIRED	1 Sino arterial nodes – RCA 60%, Circumflex 40%	
	2 AV Node and bundle – RCA AV nodal artery	
	3 R & L Bundles and Purkinje fibres – Anterior IVA (LAD)	2 of 3 to pass
	4	
PROMPTS		

Heart 2005-2

**TOPIC: Model; Heart, Chambers & Valves** \_\_\_\_\_ **NUMBER: 3.1** \_\_\_\_\_

<b>OPENING QUESTION</b>	<b>Identify the chambers and valves of the heart on this model</b>	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	RA, LA, RV, LV Tricuspid, Aortic, Pulmonary, Mitral	Identify all 4 chambers and valves needed to pass
<b>SECOND QUESTION</b>	<b>Identify the structural components of the tricuspid valve.</b>	
<b>POINTS REQUIRED</b>	1 3 cusps* (ant, post and septal attached to fibrous AV ring)	
	2 Chordae tendinae*	
	3 Papillary muscles*	
<b>PROMPTS</b>		
<b>THIRD QUESTION</b> (if needed)	<b>Identify the main features of the right atrium</b>	
<b>POINTS REQUIRED</b>	1 SVC*	* essential plus one other
	2 IVC*	
	3 Auricle	
	4 Coronary sinus	
	5 Fossa ovalis	
<b>PROMPTS</b>	Prompt for other structures	

Intercostal muscles 2008-1

OPENING QUESTION	Describe the intercostal muscles	COMMENTS
POINTS REQUIRED	1 External intercostal – from tubercles of ribs posteriorly to costochondral junction (thence external intercostal membrane) run infero-anteriorly and are most active during inspiration (to increase tonus of intercostal space) and during forced inspiration	External + internal + one other to pass
	2 Internal intercostal – deep to and at right angles to externals from sternum to angle of ribs posteriorly (continued posteriorly as internal intercostal membrane) run infero-posteriorly and are most active during expiration (to increase tonus of intercostal space). Interosseous portions act during forced expiration whilst interchondral portion act during active inspiration	
	3 Innermost intercostals – essentially the deeper parts of the internals separated from them by the intercostal nerves and vessels. Occur laterally	
	4 Subcostals – run in the same direction as the internals, but cross 2 or 3 spaces, lower spaces	
	5 Transverse thoracic – run from sternum and xiphisternum transversely to lower ribs	
	6 Levator costarum – from transverse processes to ribs	
PROMPTS		
SECOND QUESTION (if needed)	Describe the pattern of distribution of neurovascular structures in the thoracic wall.	Order of neurovascular and relation to rib and groove
POINTS REQUIRED	1 Enter medial most part of posterior ICS	
	2 Run between parietal pleura and internal IC membrane in the middle of the space	
	3 Near angle of ribs pass between internal and innermost IC muscles	
	4 Here in costal grooves, with nerve inferior to artery inferior to vein	
	5 Collateral branches arise here and run along superior border of rib	
	6 Vessels also have anterior supply and drainage	
PROMPTS		
THIRD QUESTION (if needed)	Describe the arterial supply of the intercostal spaces	
POINTS REQUIRED	1 Posterior intercostal arteries (branches of the supreme intercostal from the subclavian [1 & 2] and of the thoracic aorta)	
	2 Anterior intercostal arteries (branches of the internal thoracic [previously: internal mammary] – spaces 1 to 6 & musculo-phrenic – spaces 7 to 9)	

Lung Hilum 2013-1

<p><b>Question 2</b> CT Abdomen (Describe Structures)</p>	<p>Identify the structures visible on this CT</p> <p>What are the branches of the abdominal aorta?</p>	<p><b>Liver</b>/duodenum/IVC/<b>pancreas</b>/splenic vein/<b>kidneys</b>/<b>spleen</b>/<b>aorta</b>/coeliac trunk/crus of diaphragm/small bowel/ribs, vertebral body</p> <p>Single – <b>coeliac trunk, SMA, IMA</b> Paired –gonadal, renal, suprarenal, inferior phrenic, lumbar, subcostal. Terminating as common iliacs</p>	<p><b>Bold</b> plus 2 others to pass Prompt for pancreas</p> <p><b>Bold</b> plus two paired branches to pass</p>
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Lung lobes and Pleural Reflections 2017-2-B

Stem: Moving onto Anatomy. Coarse crackles are heard in his right posterior chest.			
<p><b>Question 5</b></p> <p><b>Subject:</b> Anatomy</p> <p>Moore's anatomy. 7<sup>th</sup> Edition. Pages 109-110</p> <p>LOA: 1</p>	<p>a) Using the CXR (CBB), name and indicate the position of the lobes of the lung</p> <p>b) Describe the surface anatomy of the parietal pleural reflections</p>	<p>a) <b>Right and left upper lobe</b> fill apices/upper zones Lingular lobe abuts the left heart border. <b>Left lower lobe abuts the left hemidiaphragm.</b> <b>Right lower lobe abuts the right hemidiaphragm.</b> <b>Right middle lobe abuts the right heart border.</b></p> <p>b) The right and left sternal parietal pleural reflections are asymmetrical but the costal and diaphragmatic reflections are symmetrical.</p> <p>The right and left sternal pleural reflection <b>start at the apices of the right and left lung</b> They descend inferomedially in parallel to the sternoclavicular joint and pass to the posterior aspect of the sternum in the anterior median line. <b>At the level of the 2-4 costal cartilage</b>, they lie parallel to each other. Inferior to this level, they become asymmetrical. On the left side, at the level of <b>the 4th costal cartilage</b>, the pleura <b>deviates to the left side</b> of the sternum and reaches <b>the 6th costal cartilage level just lateral to the left lateral sternal edge</b>. The right side passes inferiorly until it reaches the <b>6th costal cartilage in the anterior median line</b>. From then on, both sides <b>passes laterally and posteriorly</b> with the following markers: <b>At the level of the 8th costal cartilage and the mid clavicular line.</b> <b>At the level of the 10th costal cartilage at the mid axillary line.</b> <b>At the level of the 12th costal cartilage at the neck of the 12th rib.</b></p> <p>The diaphragmatic pleural reflection is in close contact to the diaphragm.</p>	<p><b>bold location concepts</b></p> <p><b>4 of 7 bold concepts</b></p>

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Pleural Reflections 2017-2-A

Stem: Moving on to Anatomy. A Chest X-ray shows a large spontaneous pneumothorax. A chest drain is to be inserted.			
<p><b>Question 2</b></p> <p>Normal CXR</p> <p><b>Subject:</b> Anatomy</p> <p>LOA: 1 <i>Moore 7<sup>th</sup> ed, page 110 to 120</i></p>	<p>a) Demonstrate the parietal pleural reflections on this normal chest x-ray.</p> <p>b) What is the preferred point of insertion of a lateral chest drain? What are the anatomical structures that border this area?</p> <p>c) Which anatomical structures may be injured if it is inserted outside this area.</p>	<p>a) Both sides start at supraclavicular fossa.</p> <p><b>Right</b> - Travels inferomedially behind middle of sternum (anterior median line) to level of 6<sup>th</sup> costal cartilage, behind xiphoid process.</p> <p>Moves laterally reaching:</p> <ul style="list-style-type: none"> <li>- midclavicular line at 8<sup>th</sup> rib</li> <li>- midaxillary line (MAL) at 10<sup>th</sup> rib</li> <li>- paravertebral line at 12<sup>th</sup> rib</li> </ul> <p><b>Left</b></p> <ul style="list-style-type: none"> <li>- Descends in anterior median line to 4<sup>th</sup> costal cartilage</li> <li>- Then laterally to 6<sup>th</sup> costal cartilage, creating a notch due to contact with pericardium</li> </ul> <p>b) <b>4<sup>th</sup> or 5<sup>th</sup> intercostal space just above the superior border of the rib. Mid-axillary line.</b></p> <p>Posterior: Anterior border of the latissimus dorsi</p> <p>Anterior: Lateral border of the pectoralis major muscle</p> <p>Inferior: Line superior to the horizontal level of the nipple</p> <p>Superior: Apex of axilla</p> <p>c) Too far anterior: breast tissue, chest wall muscle</p> <p>Too far posterior: long thoracic nerve</p> <p>Too far inferior: <b>perforation of diaphragm and puncture of intra-abdominal organ</b></p>	<p>Demonstrate understanding &amp; differences between right and left side</p> <p><b>Bold</b></p> <p>2 of 4 to pass</p> <p><b>Bold</b></p>

Rib 2004-2

TOPIC: Rib & Thoracic Vertebrae \_\_\_\_\_ NUMBER: 1.2 \_\_\_\_\_

OPENING QUESTION	Identify the major parts of this bone	COMMENTS
POINTS REQUIRED	1 Head	6 of 7 to pass
	2 Neck	
	3 Tubercle	
	4 Angle	
	5 Shaft	
	6 Facets	
	7 Groove	
PROMPTS	Which Side is it?	
SECOND QUESTION (if needed)	What are the contents of the intercostal space	
POINTS REQUIRED	1 Three layers	4 of 5 to pass
	2 Between middle & inner under rib above lies:	
	3 Vein	
	4 Artery	
	5 Nerve	
	6	
PROMPTS	Show us where they sit	
THIRD QUESTION (if needed)		
POINTS REQUIRED	1	
	2	
	3	
	4	
	5	
	6	
PROMPTS		

## Superior mediastinum 2012-2

TOPIC: Rib &amp; Thoracic Vertebrae \_\_\_\_\_ NUMBER: 1.2 \_\_\_\_\_

OPENING QUESTION	Identify the major parts of this bone	COMMENTS
POINTS REQUIRED	1 Head	6 of 7 to pass
	2 Neck	
	3 Tubercle	
	4 Angle	
	5 Shaft	
	6 Facets	
	7 Groove	
PROMPTS	Which Side is it?	
SECOND QUESTION (if needed)	What are the contents of the intercostal space	
POINTS REQUIRED	1 Three layers	4 of 5 to pass
	2 Between middle & inner under rib above lies:	
	3 Vein	
	4 Artery	
	5 Nerve	
	6	
PROMPTS	Show us where they sit	
THIRD QUESTION (if needed)		
POINTS REQUIRED	1	
	2	
	3	
	4	
	5	
	6	
PROMPTS		



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Thoracic Inlet 2017-2-A

Stem: Moving on to Anatomy. It is decided to insert an internal jugular central line. Here is a photo of the thoracic inlet and mediastinum.			
<b>Question 5</b> Thoracic inlet and mediastinum (photo, McMinn's 7 <sup>th</sup> Ed page 206)  <b>Subject:</b> Anatomy  LOA: 2 (root of neck)	a) Please identify its main features (demonstrate and/or identify by number)	a) Thoracic inlet structures (numbered): 2 Cricoid cartilage 3 Ascending cervical artery 4 Brachiocephalic trunk 7 Inferior thyroid veins <b>8 Internal jugular vein</b> 11, 12 <b>thyroid gland</b> (isthmus, lateral lobe) 13 Left brachiocephalic vein 14 Left <b>common carotid</b> artery 17 Phrenic nerve 18 Right brachiocephalic vein 19 Right <b>common carotid</b> artery 20 Recur laryngeal n 21 Right subclavian artery 22 <b>Right vagus nerve</b> 23 Scalenus anterior 24 Subclavian vein; 26 Superior vena cava 31 Thymus; 32 Thyrocervical trunk; 33 <b>Trachea</b> 35 Upper trunk of brachial plexus	Bold to pass plus 3 others
	b) What structures do you need to avoid when placing an internal jugular central line?	b) <b>Common carotid artery</b> , apex of lung, vagus nerve, oesophagus	Bold to pass

Thoracic Inlet 2016-1-D

<p><b>Q4. Photo:</b> <b>Thoracic Inlet</b></p>	<p>Identify the veins involved in drainage of the head and upper limb on the <b>Left</b> side of this specimen</p> <p>The Right IJV has been removed (demonstrate this) – identify the structures that lie adjacent to the Right IJV.</p>	<p><b>L IJV</b> <b>L subclavian</b> <b>L brachiocephalic</b> Inf thyroid v SVC</p> <p><b>R common carotid</b> <b>R subclavian</b> and its branches (<b>identify at least one of:</b> Thyro cx trunk, suprascap a, sup cx a, asc cx a, inf thyroid a, int tx a) <b>Identify at least one of:</b> Phrenic n, Recurrent laryngeal n, Vagus n, Upper trunk of brachial plexus</p>	<p>Prompt to orientate L/R</p> <p><b>Bold to Pass</b></p> <p>Prompt that clavicle, sternomastoid m and RIJV have been removed.</p>
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Thoracic Inlet 2015-1-D

<b>Stem:</b> Following successful DC cardioversion, she is still hypotensive and a central venous catheter is inserted for inotrope administration. Moving onto Anatomy.			
<b>Question 4</b> Thoracic Inlet (photo) Subject: Anat  LOA: 2	1. Identify the <b>vascular</b> structures in this photo.	1. Left common carotid aa (14); Right common carotid (19); Brachiocephalic trunk (4); Right subclavian aa (21); Right brachiocephalic vv(18); Left brachiocephalic vv (13); Subclavian vv (24); Left Internal jugular vv (8) Thyrocervical trunk (32)	5/9 to pass
	2. What <i>important</i> structures may be damaged during insertion of an IJ line?	2. <b>Carotid artery</b> , Phrenic Nerve, Brachial plexus, Pulmonary dome, Thoracic duct, Trachea, Subclavian vessels	Bold plus 1
	3. What clinical complications may occur from damage to these structures?	Ptx, Haemothorax, hydro/chylothorax, stroke, Air embolism,, bleeding, Haematoma=> airway obstruction., AV fistula, etc	Appropriate example for each
	[What other complications can occur from central line insertion?]	Line misplacement/misdirection, arrhythmias, Infection, Thrombosis/PE pericardial tamponade, catheter loss/embolus, wire knotting	





Thoracic Inlet 2006-2

3. Photo – thoracic inlet - aa	1. Using photograph demonstrate branches of aortic arch	1 brachiocephalic trunk 2 left common carotid 3 left subclavian not visible		
	2. What are the branches of 1 <sup>st</sup> part of subclavian artery	1 vertebral 2 thyrocervical trunk 3 internal thoracic ( mammary )		
	3. What are the branches of the thyrocervical trunk	1 transverse cervical 2 suprascapular 3 inferior thyroid		



## Thorax vasculature 2009-1

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Question 1: (Photo)	Identify the major vascular structures in this picture.  (Prompt if required)	<b>Superior vena cava (26)</b> <b>Left (13) and right (18) brachiocephalic vein (13)</b> <b>Left and right subclavian veins (24)</b> <b>Left internal jugular vein (8)</b> <b>Brachiocephalic trunk (4)</b> <b>Right common carotid artery (19)</b> <b>Right subclavian artery (21)</b> <b>Left common carotid artery (14)</b> <b>Thyrocervical trunk (32) and its branches:</b> inferior thyroid art. (6), ascending cervical art (3); internal thoracic art. (9)	Need 6/11 bold to pass
Question 2: (Not related to photo)	Describe the course of the right subclavian artery.	<ul style="list-style-type: none"> <li>• <b>Arises from brachiocephalic trunk</b></li> <li>• <b>Runs posterior to right sternoclavicular joint</b> as ascends through thoracic inlet</li> <li>• <b>Arches superolaterally and passes posterior to anterior scalene muscle</b> (relationship to this muscle defines its 3 parts)</li> <li>• <b>Descends posterior to middle of clavicle and crosses over 1<sup>st</sup> rib to become axillary artery</b></li> </ul>	3/4 Bold required to pass
Question 3: (Not related to photo)	Name the branches of the subclavian artery.	1 <sup>st</sup> part: <ul style="list-style-type: none"> <li>• <b>Vertebral artery</b></li> <li>• <b>Internal thoracic artery</b></li> <li>• <b>Thyrocervical trunk</b></li> </ul> 2 <sup>nd</sup> part: <ul style="list-style-type: none"> <li>• <b>Costocervical trunk</b></li> </ul> 3 <sup>rd</sup> part: <ul style="list-style-type: none"> <li>• <b>Dorsal scapular artery</b></li> </ul>	2/3 of part 1 bold to pass

## Thorax vasculature 2007-2

**TOPIC:** Photo: Thorax \_\_\_\_\_ **NUMBER:** 5

OPENING QUESTION	In this picture, please identify the major vascular structures	COMMENTS
POINTS REQUIRED	1 Left (13) & right (18) brachiocephalic veins and SVC (26)	Needed to pass 7/10
	2 Left internal jugular vein (8)	
	3 Subclavian veins (24 left & right)	
	4 Left common carotid artery(14)	
	5 Brachiocephalic trunk (4)	
	6 Right common carotid artery (19)	
	7 Right subclavian artery (21)	
	(Thyrocervical trunk (32) and branches extra: inf thyroid(6), asc cervical (3), int thoracic art (9) etc)	
PROMPTS	One of the veins has been removed from the right side REMOVE PICTURE AT END OF FIRST QUESTION	
SECOND QUESTION (if needed)	Please describe the branches of the descending thoracic aorta	
POINTS REQUIRED	1 Posterior intercostal arteries (paired post x 9)	Needed 2/4 to pass
	2 Oesophageal (unpaired ant x 2-5)	
	3 Bronchial (paired lat) – left more than right	
	4 (Pericardial, mediastinal, subcostal, sup phrenic)	
	5	
	6	