VIVAs UPPER LIMB

OPENING QUESTION	CAN YOU IDENTIFY THE MAJOR LANDMARKS OF THE PROXIMAL HALF OF THIS BONE?	COMMENTS
POINTS REQUIRED	1 head neck x 2 2 tuberosities bicipital groove (intertubercular) shaft deltoid tuberosity radial/spiral grooves	6 TO PASS
SECOND QUESTION (if needed)	WHAT ARE THE MAJOR MUSCLES OF SHOULDER ABDUCTION & CAN YOU IDENTIFY WHERE THEY INSERT?	
POINTS REQUIRED	1 Deltoid Deltoid tuberosity Supraspinatus Greater tuberosity	2/2
PROMPTS		

SECOND QUESTION (if needed)	**What factors contribute to the stability of the glenohumeral joint?**	
POINTS REQUIRED	1 Muscular- rotator cuff- TM,SS,SSp,Infsp	3 /4 to pass
	2 Bony structures and labrum- poor	
	3 Ligaments- coracoacromial ligament	
	4 capsule	
PROMPTS		

TOPIC: Scapula _____ **NUMBER: 3-3** _____

OPENING QUESTION	Identify the major bony features of this bone	**COMMENTS**
POINTS REQUIRED	1 Spine & Acromium	6 of 10 to pass
	2 Supraspinous & Infraspinous fossa	
	3 Subscapular fossa & Glenoid	
	4 Tubercle for Long head triceps	
	5 Tubercle for Long Head Biceps	
	6 Coracoid process & Supraspinal notch	
	7	
PROMPTS		
SECOND QUESTION (if needed)	If needed – Which muscles comprise the rotator cuff?	All 4 named to pass
POINTS REQUIRED	1 Subscapularis (medial 2/3 of subscapular fossa) to lesser tuberosity	
	2 Supraspinatus(medial 2/3 supraspinous fossa) to upper greater tuberosity	
	3 Infraspinatus (infraspinous fossa) to middle greater tuberosity	
	4 Teres Minor (upper lateral border) to lower greater tuberosity	

SECOND QUESTION (if needed)	What are the common sites of fracture in the proximal half of this bone and what nerves are at risk with these fractures		
POINTS REQUIRED	1 NOH – axillary and brachial plexus		1 of 2
	2 Midshaft – radial nerve, wrist drop & sensory deficit		

Question 2: Bones: Humerus	Please identify this bone and its main features	Proximal: Head, anatomical & surgical neck, greater and lesser tubercles, intertubercular groove, deltoid tuberosity, groove for radial nerve, Distal: condyles, epicondyles, trochlea, capitellum, coronoid and olecranon fossae	(6/8 to pass) (5 to pass)
	What factors stabilise the shoulder joint?	Bones –unstable, glenoid labrum helps. Ligs: Intrinsic. glenhumeral ligs – ant, weak. Coracohum lig stronger, lies superiorly. Extrinsic support by coraco-acromial lig. Superiorly	Name bone/muscle/lig concept ID bones as weakest part and muscles as most important
	Demonstrate the attachment of the rotator cuff muscles on the humerus	Muscles: rotator cuff muscles (SITS) stabilise superiorly. AP stability from TMaj, LD, Pec Maj	Name and ID attachment 3 of 4 RC muscles

Primary Examination 2006.2 ANATOMY VIVA

Fri 15th September Morning Session

Topic	Questions	Points required	Comments	Mark
1.Bone – scapula and humerus rotator cuff, origins, insertions, actions	1. Demonstrate on these bones the attachments and insertions of the muscles that form the rotator cuff .	**1. subscapularis:** (n=upper and lower subscapular nerves) O= medial 2/3 costal surface scapula & intermuscular septa I= by tendon which fuses with capsule shoulder jnt into lesser tubercle humerus 2. **teres minor** (N= posterior branch axillary N) O=elongated oval area dorsal surface axillary border scapula I= lower facet greater tubercle humerus 3. **supraspinatus** (N= suprascapular n. C5,6) O= medical 2/3 supraspinous fossa scapula I = smooth facet upper part greater tubercle humerus 4. **infraspinatus** (N =suprascapular N) O= medial 2/3 infraspinous fossa (& deep surface infraspinous fascia which covers muscle) I=smooth area central facet greater tubercle humerus	**Prompt:** What are the rotator cuff muscles ?	
	2. What is the action of the rotator cuff muscles?	1. stability to shoulder joint by brace head humerus against glenoid cavity (tendons fuse with capsule jnt) 2.supraspinatus initiates abduction and other rotator cuff hold head humerus down 3.& allow fixing upper end humerus during action wrist 4. subscapularis as prime mover is med rotator humerus 5. infraspinatus & teres min= lat. rotator of hum. 6. supraspinatus abduction shoulder		

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 **and** 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 **or** Subclavian vein **and** name 2 others 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

SECOND QUESTION (if needed)	Demonstrate the attachments of the ulnar collateral ligament on the lateral	
POINTS REQUIRED	1 Anterior band – medial epicondyle to medial edge of coronoid	
	2 Posterior band – medial coronoid to medial olecranon	
	3 Middle band – between anterior & posterior bands	

ACEM 2006.1 PRIMARY VIVA EXAMINATION

SUBJECT: ANATOMY

TOPIC: Cubital Fossa _____ **NUMBER: Th PM**

OPENING QUESTION	Describe the boundaries and contents of the cubital fossa	**COMMENTS**
POINTS REQUIRED	1 Pronator teres medially	
	2 Brachioradialis laterally	
	3 Line between the epicondyles	
	3. Deep fascia & bicipital aponeurosis - Roof	
	4 Brachialis, supinator - Floor	1 ,2 & 3 to pass
PROMPTS	Perhaps questions of orientation. Tell me what you can see	
SECOND QUESTION (if needed)	What are the contents of the cubital fossa? (medial to lateral)	
POINTS REQUIRED	Median N,	
	Brachial artery	
	Biceps tendon	
	Radial nerve	
	Posterior interosseous branch	4 of 5 to pass

	X-Ray Elbow	
QUESTIONS AND POINTS REQUIRED	Demonstrate the bony features of the elbow joint: Humerus: epicondyles, olecranon fossa, capitulum, trochlea Radius: head, neck, tubercle Ulna: olecranon, coronoid process	All to pass
	Demonstrate the capsular attachments (AP and lateral films): Around olecranon, radial and coronoid fossae of humerus Olecranon margins Annular ligament	Articular margins of humerus, olecranon margins and annular ligament to pass
	Demonstrate the ligamentous attachments: Medial collateral – medial epicondyle to olecranon with 3 elements Lateral collateral – lateral epicondyle to annular ligament	Name the 3 ligaments to pass

c. Describe the collateral ligaments of the elbow.

Radial- lat epicondyle of humerus and blends distally with annular ligt of radius.
Ulnar- medial epicondyle of humerus to 1) coronoid tubercle (**anterior band**)..strongest **2) Posterior fan like band weakest and 3)** slender **oblique band.**

2/4 b

SECOND QUESTION (if needed)	Outline the capsular attachments of the humerus	
POINTS REQUIRED	1 Medial and lateral margins	Points 3 & 4 to pass
	2 Capitellum and trochlea.	
	3 Above the cornoid and olecranon fossa	
	4. Excludes epicondyles	

SECOND QUESTION (if needed)	WHAT MUSCLES ARE INVOLVED IN FLEXION OF THE ELBOW	2/4 TO PASS
POINTS REQUIRED	BICEPS	
	SUPINATOR	
	BRACHIORADIALIS	
	BRACHIALIS	
	FLEXOR DIGITORUM SUPERFICIALIS	
PROMPTS		

COMMENTS

CEM PRIMARY 2009/1 ANATOMY VIVA Friday am Question 4 *Candidate Number*..... AC

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE
Question 1: (Photo)	On this photo, identify the structures bound by the extensor retinaculum	**From radial to ulnar, grouped by commor synovial sheaths** **APL (2)/EPB (11)** **ECRL (6)/ECRB (5)** **EPL (12)** **Ext indicus (10)/Ext digitorum (9)** **Ext digiti minimi (8)** **Ext carpi ulnaris (7)**
Question 2: (Not related to photo)	What is the motor supply of these muscles?.	• All radial/post interosseus nerve (C7, except ECRL which is C6 too)

ACEM 2004.2 PRIMARY VIVA EXAMINATION

SUBJECT: ANATOMY

TOPIC:Carpal Bones & Scaphoid_____ NUMBER: 1.1 _____

OPENING QUESTION	Identify the bones shown on this X Ray	**COMMENTS**
POINTS REQUIRED	1 Phalanges	7 of 8 Carpal to pass
	2 Metacarpals	
	3 Carpals	
	4 Radius/Ulna	
	5	
	6	
	7	
PROMPTS	Prompt by Pointing	
SECOND QUESTION (if needed)	Identify the bones of the Carpus on this lateral	
POINTS REQUIRED	1 Lunate	Lunate & capitate to pass
	2 Capitate	
	3 Radius	
	4	
	5	
	6	
PROMPTS		
THIRD QUESTION (if needed)	Describe the blood supply of the scaphoid	
POINTS REQUIRED	1 Vascular Perforators more numerous distally	

OPENING QUESTION	WHAT ARE THE MAJOR BONEY LANDMARKS OF THE DORSUM OF THE WRIST?	**COMMENTS**
POINTS REQUIRED	1 DORSAL TUBERCULE (RADIAL TUBERCULE)	2/2
	2 Ulna styloid	

TOPIC: Wrist_____ **NUMBER: 2-3** _____

OPENING QUESTION	Identify the bones of the carpus	**COMMENTS**
POINTS REQUIRED	1 Scaphoid }	8 of 8 to pass
	2 Lunate } (proximal row)	1 prompt acceptable
	3 Triquetrium }	
	4 Pisiform }	
	5 Trapezium }	
	6 Trapezoid } (distal row)	
	7 Capitate }	
	8 Hamate }	
PROMPTS		
SECOND QUESTION (if needed)	What are the attachments of the flexor retinaculum?	4 bones to pass
POINTS REQUIRED	1 Hamate and Pisiform medially – piso-hamate lig	
	2 Trapezium and Scaphoid laterally – crest on trapezium and tubercle of scaphoid	
	3	
PROMPTS		
THIRD QUESTION (if needed)	What are the surface markings?	
POINTS REQUIRED	1 Distal Volar flexion crease at scaphoid and pisiform	

THIRD QUESTION (if needed)	**What structures pass through the carpal tunnel?**	
POINTS REQUIRED	1 Carpal tunnel b/w flex. retinac. & carpal bones	
	2 Median n* & all long flexors of fingers and thumb	*essential
	3 4 sup flexors*: mid& ring ant to index&little	*essential
	4 profundus deeper* in one plane, FPindicus separate	*essential
	5 All 8 tendons in one common flexor sheath, but	
	6 FPL passes`thru on its own	Plus one other structure

ACEM 2007.1 PRIMARY VIVA EXAMINATION

SUBJECT: ANATOMY

TOPIC: Wrist dorsum _____ NUMBER: _____

OPENING QUESTION	What are the boundaries of the anatomical snuffbox?	**COMMENTS**
POINTS REQUIRED	1)EPL on the ulnar side	Need 2 out of 3 tendons to pass
	2)EPB/APL on the radial side	
	3)Floor is radial styloid/scaphoid/trapezium/base of thumb MC	
PROMPTS	What structures make up the floor of the snuffbox?	
SECOND QUESTION (if needed)	What are the contents of the anatomical snuff box?	2 out of 3
POINTS REQUIRED	1) Radial artery	
	2) Cutaneous branches of radial nerve	
	3) Origin of cephalic vein	
PROMPTS	Are there any other vessels in the snuffbox?	
THIRD QUESTION (if needed)	What tendons run underneath the extensor retinaculum?.	
POINTS REQUIRED	1) Divides dorsum of wrist into 6 compartments. going from radial to ulna 1st: APL/EPB are in first compartment, each in sep sheath 2nd radial extensors of wrist ECRL/ECRB each in own sheath 3rd on ulna side of radial styloid, EPL 4th 4 tendons of Ext.Dig over tendon of Ext indicis: common sheath 5th over the radio-ulnar joint, double tendon of Ext dig minimi 6th groove near base of ulnar styloid Ext Carpi Ulnaris	**3/6 to pass**

What movements occur at the wrist joint?	Flexion >extension. Add>Abduction Circumduction		All to p
5. Flexor retinaculum	1. On your own wrist demonstrate the surface markings and attachments of the flexor retinaculum	1. volar surface wrist - distal skin crease = proximal border 2. med attachment = pisiform & hook hamate 3. lat attachment = tubercle scaphoid & trapezium	Pr De po ret
	2. Describe the contents of the carpal tunnel	in a superficial layer from lat to medial – 1.Flex carpi radialis then 2. median nerve then 3 long flexor tendons to thumb and fingers with tendons of FDS in 2 rows – mid&ring superficial to index &little finger 4. FDP tendons deep 5. FPL tendon deep and lat to FDP	Pr Na pa fle
	3. What structures pass superficial to flexor retinaculum From medial to lateral	1 ulnar nerve 2 ulnar artery 3 superficial cutaneous branches ulnar nerve 4 palmaris longus 5 sup. cut. branch median n. 6.Palmar branch radial a.	

ACEM 2003.1 PRIMARY VIVA EXAMINATION

SUBJECT: ANATOMY

TOPIC: ULNA_____ **NUMBER: 3PM** _____

OPENING QUESTION	IDENTIFY THE MAJOR FEATURES OF THIS BONE	COMMENTS
POINTS REQUIRED	OLECRANON/CORONOID/TROCHLEA/RADIAL NOTCH/SUPINATOR CREST/ SUBLIME TUBERCULE	7 FEATURES TO PASS
	SHAFT/ ANTERIOR & POSTERIOR BORDERS	
	DISTALLY: STYLOID	

TOPIC 2	Forearm model	
QUESTIONS AND POINTS REQUIRED	On this model, demonstrate pronation and supination of the forearm	Demonstrate to pass
	Which muscles are involved	Pronation: PQ and PT Supination: Supinator and biceps to pass
	What nerves are required for pronation and supination:	Median for pronation, Musculocutaneous and radial for supination

QUESTION	ESSENTIAL KNOWLEDGE	
Could you please identify the muscular structures visible in the hand of this model? (**Prompt** away from thenar/hypothenar muscles)	Potentially 10 ..3 thenar (op, apb, fpb) 3 hypothenar (adm, fdmb, odm), Add Poll, Lumbrical, Dorsal and palm int 6/10	5 t
Could you demonstrate the actions produced by the lumbricals and the interossei and describe their innervation?	**Lumbs** do Z, and PAD/ DAB for **interossei**, along with extension.. actions are **combined** to produce Z All deep br ulnar, except for lat 2 lumbs..median nerve..,	Al
Could you demonstrate the origins and insertions of the short muscles of the hand?	**Lumb**..orgn1,2 lat side of lat 2 tendons of fdp, 3, 4 bipennate from med 3 tend fdp, **dors int** orgn bipenn from adjacent mc's, insert base prox ph, ext expans, **palm int** palm surface 2,4,5 mc, ins as for dors, 2,4,5	Bo

TOPIC 5	Small muscles of hand	
QUESTIONS AND POINTS REQUIRED	Describe the function of the interossei and lumbricals	Flexion at MCPJs, extension at IPJs
	What is the nerve supply of these muscles	Interossei: ulnar Lumbricals: Ulnar 2 and median 2

COMMENTS

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Question 3: **Model Thumb**	a. Could you please identify the muscles of the thenar eminence, and demonstrate their origins and insertions? b. Please demonstrate the movements produced by the thenar muscles. What nerves innervate these muscles?	APB, FPB, OP (all originate fl ret and scaphoid/trap tubercles) apb inserts lat side base prox phal, op inserts lat 1st mc, and both heads fpb insert lat prox phal. base Op opposes (mc to middle palm, rotates), abd abducts, helps opposition, fl flexes..all recurrent br. Med n, except dp hd fpb…deep br ulnar	3/6 pass

TOPIC: Middle Finger _____ **NUMBER: 1-4** _____

OPENING QUESTION	What are the tendon attachments of muscles involved in flexion of joints of the middle finger	**COMMENTS**
POINTS REQUIRED	1 FDS: round FDP tendon/chiasma/insert margin of front middle phalanx	Required
	2 FDP Base terminal phalanx	Required
	3 Lumbricals Extensor Sheath thence Dorsum proximal phalanx	
	4 Palmar & Dorsal Interossei (flex MP if work together)	
	5	
	6	
PROMPTS		
SECOND QUESTION (if needed)	What is the nerve supply to these muscles?	
POINTS REQUIRED	1 Ant interosseus branch median (middle/ring)	2 to pass
	2 Ulnar (ring/little)	
	3 60% 2:2 & 40% 3:1/1:3	
	4 Possible lumbricals by ulna	

TOPIC: Thumb_____ **NUMBER: 3-4** _____

OPENING QUESTION	What muscles are involved in movement of the thumb?	**COMMENTS**
POINTS REQUIRED	1 MP Flexion: FPL & Br	
	2 MP Extension: EPL & Br	
	3 Palmar abduction: Abductor pollicis brevis	
	4 Radial Abduction: APL & EPB	
	5 Ulnar adduction: Adductor Pollicis	
	6 Flexion abduction: AP & FPB	
	7 Opposition: Opponens & EPL & Br	
PROMPTS		
SECOND QUESTION (if needed)	What is the nerve supply to these muscles?	
POINTS REQUIRED	1 Adductor Policis: Ulnar (C8)	
	2 FPB: variable median or ulnar or both	
	3 Opponens: Both median & Ulnar	
	4 All the others in thenar emminence -Recurrent branch median nerve (T1 & some C8)	
	5 Long Tendons – Radial nerve	
	6	

Question 3: Model: Arm Extensor group of forearm muscles	{Using the model} Identify the extensor muscles of the forearm at the level of the wrist	1. apl 23, epb 22 2. ecrl 19, ecrb 18 3. epl 21 4. ed 27, ei 5. edm 6. ecu 16	7/9
	What is the nerve supply of this compartment?	Radial nerve and its deep branch becoming post interosseus nerve	Radial n. to pass
	Describe how the action of these muscles produces thumb movement	Apl abduction and extension at carpometacarpal jt Epl extension at ip joint Epb extension at mcp	All with prompts

1. Using this model, please identify the muscles in the flexor compartment of the forearm? You may lift off the detachable segment	Superficial compartment -Pronator teres, FCR, FDS, Palmaris Longus, FCU Deep compartment -FDP, FPL, Pronator Quad
2. Please describe and demonstrate the distal insertions of these muscles.	PT..lateral convexity of radius, FCR..base of 1, 2 mcarpals, FDS..base of middle phalanx, PL..palmar apon, FCU..pisiform, FDP..base of distal phalanx, FPL..base of distal phal, PQ..lat part of radius

Q 2:	**What are the contents of the central fascial compartment of the palm?**	Flexor tendons and sheaths Lumbricals Superficial palmar arterial arch Digital vessels Digital nerves	2 of 5 to pass
Q3:	**What are the boundaries of the central fascial compartment of the palm?**	Lateral – fibrous septum from palmar aponeurosis to 3rd metacarpal Medial – fibrous septum from palmar aponeurosis to 5th metacarpal Palmar aponeurosis superficial [covers it] Inferior mid palmar space	2 of 4

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Q 1:	**Describe the palmar fascial spaces.** **Prompt:** **Direct to fascial spaces not compartments**	i) Midpalmar: Underlies central fascial compartment Related distally to synovial sheathes 3-5th digits Related proximally to common flexor sheath (as it emerges from carpal tunnel) ii) Thenar: Underlies thenar compartment Related distally synovial flexor tendon sheath of the index finger Related proximally to common flexor sheath distal to the carpal tunnel	3 of 6 to pass

Brachial plexus

TOPIC: Brachial Plexus _____ **NUMBER: 1.5** _____

OPENING QUESTION	The anterior wall of the axilla has been removed. Show us the components of the p	**COMMENTS**
POINTS REQUIRED	1 Subscapularis (17)	2 of 3 to pass
	2 Teres Major (18)	
	3 Lattisimus Dorsi (19)	
	4	
	5	
	6	
	7	
PROMPTS	Brachial Plexus / Begin proximally and work distally	
SECOND QUESTION (if needed)	What are the branches of this structure? [identify medial cord - 3]	
POINTS REQUIRED	1 Medial pectoral nerve	4 of 5 to pass
	2 medial root median nerve (9)	
	3 medial cutaneous nerve of the arm (13)	
	4 medial cutaneous nerve of the forearm (15)	
	5 ulna nerve (14)	
	6	
PROMPTS	The Axillary Artery has been removed	
THIRD QUESTION (if needed)	What anatomical structures are associated with the various components of the brachial plexus	
POINTS REQUIRED	5 roots - behind scalenus anterior	
	3 trunks – lower part of posterior triangle	
	A/P divisions - behind clavicle	
	3 cords - outer border first rib (beginning of axilla)	
	cords enter above 1st part of artery, approach and embrace its 2nd part, give off branches around its 3rd part	
PROMPTS		

ACEM 2007.2 PRIMARY VIVA EXAMINATION

SUBJECT: ANATOMY 6 September 2007 pm.

TOPIC: DISCUSSION: BRACHIAL PLEXUS _____ **NUMBER:** 4 _____

OPENING QUESTION	What is the brachial plexus and how is it formed?	**COMMENTS**
POINTS REQUIRED	1 Major nerve network supplying the upper limb, extends from neck to axilla.	Start proximally to distal
	2 Results in the formation of multisegmental peripheral nerves.	
	3 Initially formed by the union of the anterior rami (roots) lower cervical (C5-8) and first thoracic nerves.	
	4 These roots unite to form 3 trunks; superior, middle and inferior	
	5 Each trunk divides into anterior and posterior divisions	
	6 These division then form 3 cords: Anterior divisions of superior and middle trunks for the lateral cord, anterior division of inferior trunk forms medial cord, posterior divisions of all 3 trunks unite to form posterior cord	Need to know roots,trunks,divisions, cords to pass
Optional	7 Major peripheral nerves supplying upper limb form from these cords. Lateral cord gives rise to lateral pectoral n, musculocutaneous n and lateral root of median n. Medial cord gives rise to medial root median n, medial pectoral n, medial cutaneous n of arm, medial cutaneous n of forearm and ulnar n. Posterior cord gives rise to upper subscapular n, lower subscapular n, thoracodorsal n, axillary n, and radial n.	Name at least medial and lateral roots median n, axillary n, radial n and ulnar n.
PROMPTS	1. No need to describe supraclavicular branches of brachial plexus. 2. Would you prefer to describe the formation of the brachial	

SECOND		
a) Identify the components of the brachial plexus as shown in this photo. The vessels have been removed. PROMPT: Direct candidates to start at superior aspect.	**Posterior Cord** **Radial Nerve** (Terminal br) Axillary Nerve (Terminal br) Thoracodorsal n Upper and Lower Subscapular nn **Lateral Cord** Musculocutaneous n (terminal br) Lat root of median n (terminal br) **Medial Cord** **Ulnar nerve (Terminal Br)** Med root of median nerve (terminal br) Medial cut nn of arm and forearm **Median nerve**	Identify – 3 cords, 3 bolde and 2 others to pass
b) Identify the muscles visible in this photo	Surrounding muscles: Deltoid, biceps, coracobrachialis, pec minor, triceps, lat dorsi, subscapularis, teres major	Identify 3 muscles to pass

Median Nerve

a) Identify the median nerve in this photo and adjacent structures.	16. Median n (15. Flexor retinaculum (anterior) – divided) 12. Flexor digitorum superficialis (posterior) 14. Flexor pollicis longus (lateral) 11. Flexor digitorum profundus (deep posterior) 18. palmar cutaenous branch of median n	Median n and 2 other structures to pass
b) Demonstrate where sensation changes may occur if the median nerve is injured in the forearm.	Palmar 3 ½ digits, adjacent palm and dorsal distal fingers	Finger distribution to pass

QUESTION	ESSENTIAL KNOWLEDGE	NOTES
c) Demonstrate these changes if the median nerve is compressed in carpal tunnel syndrome	Same, except palmar area is preserved (palmar cutaneous branch arises proximal to flexor retinaculum	Bonus question

THIRD QUESTION (if needed)	**What are the structures supplied by the median nerve?**	8 structures to pass
POINTS REQUIRED	1 No branches in arm	
	2 **Articular branches** to elbow joint	
	3 **Muscular branches** to PT; FCR; PL; FDS	
	4 **Anterior interosseus nerve** to PQ; FPL; ½ FDP; articular branches to wrist joint	
	5 **Palmar cutaneous branch** to skin of lateral part of palm and adjacent thenar eminence	Numbered 18
	6 **Recurrent branch** to thumb muscles (APB; OP; FPB)	Numbered 19
	7 **Palmar digital branches** to lumbricals 1,2 and cutaneous supply	Numbered 17
PROMPTS	What muscles are supplied by the median nerve? Identify the numbered branches – what do they supply?	

COMMENTS Must pass questions 1 & 2 to pass overall

QUESTION	Demonstrate the course of the median nerve in the forearm and wrist	COMMENTS **Must ID the median nerve + 3/4 muscles/tendons to pass**
POINTS REQUIRED	1 Exits cubital fossa between 2 heads of pronator teres	
	2 Runs distally adherent to posterior aspect of FDS	
	3 At wrist emerges between FCR & FDS, just deep + lateral to palmaris longus	
	4. Deep to the flexor retinaculum	
PROMPTS	Show me the median nerve at the wrist. Name the tendons adjacent to it	
SECOND QUESTION (if needed)	What muscles does the median nerve supply in the forearm and hand?	Must address muscular and sensory components
POINTS REQUIRED 3 to pass	1 PT, FCR, PL,FDS + elbow + prox radio-ulnar joints	
3 to pass	2 Anterior interosseous branch: FDP (index+middle finger bellies), FPL, PQ, inf radio-ulnar, wrist + carpal joints	
	3 Palmar branch- supplies skin over thenar eminence	
	4 Radial 31/2 digits sensation	
	5 Radial 2 lumbricals	

SECOND QUESTION	**What are the branches of the median nerve distal to the flexor retinaculum and what do they supply?**	
POINTS REQUIRED	Gives muscular branch (recurrent) which curls proximally around distal border of flexor ret. to supply thenar* mm.	*essential
	Medial branch Divides again into 2 and supplies the palm skin*, the cleft and adjacent sides of ring and middle fingers and the cleft and adjacent sides of middle and index fingers. This latter branch also supplies the second lumbrical Lateral branch Supplies palmar skin, radial side of index, the whole of the thumb and it's web on the palmar surface and the distal part of the dorsal surface. The branch to the index finger supplies the first lumbrical. These palmar digital branches also supply the nail beds and distal dorsal skin of the digits	*essential to demonstrate cutaneous distribution
PROMPT	Demonstrate the sensory distribution of the median nerve in the hand.	

COMMENTS

Radial Nerve

OPENING QUESTION	Describe the course of the radial nerve in the upper limb	**COMMENTS**
POINTS REQUIRED	1 C5-7 branch of posterior cord	
	2 Leaves axilla	
	3 Oblique across humerus	
	4 Heads triceps (bet long and med heads)	
	5 Spiral groove	
	6 Pierce intermuscular septum	
	7 Brachialis / brachioradialis – lies between	
	8. Ext carpi radialis longus	
PROMPTS		
SECOND QUESTION (if needed)	Name the major branches of this nerve in the arm	
POINTS REQUIRED	1Triceps – long head, lat head, med head	
	2 Post cutaneous	
	3 Anconeus	
	4 lat Cut n of arm	
	5 Brachioradialis	
	6 Ext carpi radialis longus	
	7. Lat brachialis	
	8. Elbow joint	
	9. Post interosseous: ECRB and supinator in cubital fossa Ext compartment of forearm ED, EDM, ECU APL, EPL, EPB Ext indicis	

Photo: Cubital fossa	2. Demonstrate the course and branches of the Radial nerve, and name the structures they supply	veins with Brachial a 2. Radial n under BR muscle laterally, **divides into superficial and deep, former through Supinator to post. compt. muscles/jt., lateral to ant. compartment forearm sensory only to dorsum hand**	Bold to pass

SECOND QUESTION (if needed)	What functional deficit results from a radial nerve injury in the mid arm and explain why?
POINTS REQUIRED	1 Elbow extension preserved – medial and long head triceps
	2. wrist drop – inability to extend wrist and MCP jnts of fingers and thumb of muscles of common extensor origin: - extension BR, ECRL, ECRB, ED, EDM, ECU. + deep extensors Aconeus, supinator, ABPL, EPB, EPL, EI
	3. Inter phalangeal jnts maintained due to lumbricals and interossei
	4. sensory loss usually small over 1st interosseous space (radial 2/3 dorsum of hand)
	5
	6
PROMPTS	What would you expect at the elbow? What muscles are supplied by radial nerve? What is its sensory distribution?

Dermatomes

What are the dermatomes of the upper limb? Prompt to demonstrate on own arm What is the peripheral nerve supply to the skin of the hand? (Forearm as bonus)	C 3,4: base of neck, lateral over shoulder C5: lateral arm C6: lateral forearm and thumb C7 middle and ring(or mid 3) fingers and middle post surface of limb C8: Little finger, medial hand and forearm T1: mid forearm to axilla T2: small part of arm and axilla Forearm: Post cut n of forearm, from radial > post forearm. Med cut n of forearm from medial cord of B plexus > ant and medial forearm. Lat cut n of forearm, from musculocut > lat forearm Hand: Radial > base of thumb and lateral dorsum of hand. Ulnar > ulnar 11/2 fingers and palm. Median > radial palm and 31/2 fingers inc post tips of these.	Ne Ne an

Describe the sensory supply of the dorsum of the hand.	• Ulnar…medial 1 ½ digits via palmar cut branch • Radial….sup branch..lat half of dorsum of hand excluding distal digits. • Median…dorsum of radial 3 ½ digits, via dorsal branches of palmar dig nerves	

Describe the course of the brachial artery as it passes through the arm (pull off both upper forearm muscles from model)	From lower border of teres major(cont. of axillary art) to neck of radius. Medial to humerus > 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	To pass – co artery, Division ove ulna and radi nerve crosse

	skin	
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 v **and** becomes Brachiocepha vein **and** demonstrates cou posterior to clavicle to pass

Question 4: Photo: Upper Limb	Describe the superficial venous drainage of the upper limb. Use this photograph if you need to. PROMPT: identify the veins first. Once identified, track distally and describe proximal path	Hand: dorsal and palmar networks drain to **cephalic** (anterolateral) and **basilic** (posteromedial, around medial epicondyle). Connected in cubital fossa by **median cubital**. Basilic goes deep distal/middle 1/3s of arm with axillary artery to become axillary vein. Cephalic in deltopectoral groove, deep through DP fascia,

ACEM 2003.1 PRIMARY VIVA EXAMINATION

SUBJECT: ANATOMY

TOPIC: VENOUS DRAINAGE UPPER LIMB _____ **NUMBER: 2** _____

OPENING QUESTION	CAN YOU DESCRIBE THE VENOUS DRAINAGE OF THE UPPER LIMB	**COMMENTS**
POINTS REQUIRED	1. SUPERFICIAL & DEEP	4/5 TO PASS
	2 SUPERFICIAL: DORSAL VENOUS ARCH TO CEPHALIC & BASILIC VV	
	3 PALM DRAINS DORSALLY	EXTRA
	4 DEEP: CORRESPONDS TO ARTERIES	
	5 STARTS AS VENAE COMITANTES	
PROMPTS	FOR DETAILS OF COURSE OF CEPHALIC VEIN	

3. Which veins in the cubital fossa are usually accessed during venepuncture? What are the commonly observed variations to these vessels?	3. Median cubital, **Basilic and Cephalic** v's Median basilic and median cephalic in 20%	(O

9/1 ANATOMY VIVA Thursday pm Question 5 *Candidate Number*..... AGREED MARK.....

QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Describe the drainage of the superficial lymphatics of the upper limb?	Superficial lymphatics originate from lymphatic plexuses in the hand & ascend mostly with the superficial cephalic & basilar Vs. Some accompanying the basilar v enter the **cubital** LNs. Efferent vessels from here drain -> **humeral** (lat) axillary LNs (-> **central** axillary LNs -> **apical** axillary LNs). Most travel with cephalic v and enter the **apical** axillary LNs, but some enter the **deltopectoral** LNs earlier.	Travel with superficial veins **and** drain into axillary LNs to pass.
Describe the drainage of the deep lymphatics of the upper limb.	Deep lymphatics accompany the major deep vs in the UL & terminate in the **humeral** (lat) axillary LNs. These drain -> **central** axillary LNs - > **apical** axillary LNs -> supraclavicular LNs -> R & L subclavian lymphatic trunks.	Travel with deep veins **and** drain into axillary LNs to pass.
How do the right & left subclavian lymphatic trunks drain?	The R subclavian lymphatic trunk may be joined by R jugular & bronchomediastinal trunks to from the R lymphatic duct **or** it may enter the right venous angle (junction of int jug & subclavian vs) independantely. The L subclavian lymphatic trunk joins the thoracic duct.	R subclavian LT -> right venous angle **and** the L subclavian LT -> thoracic duct.