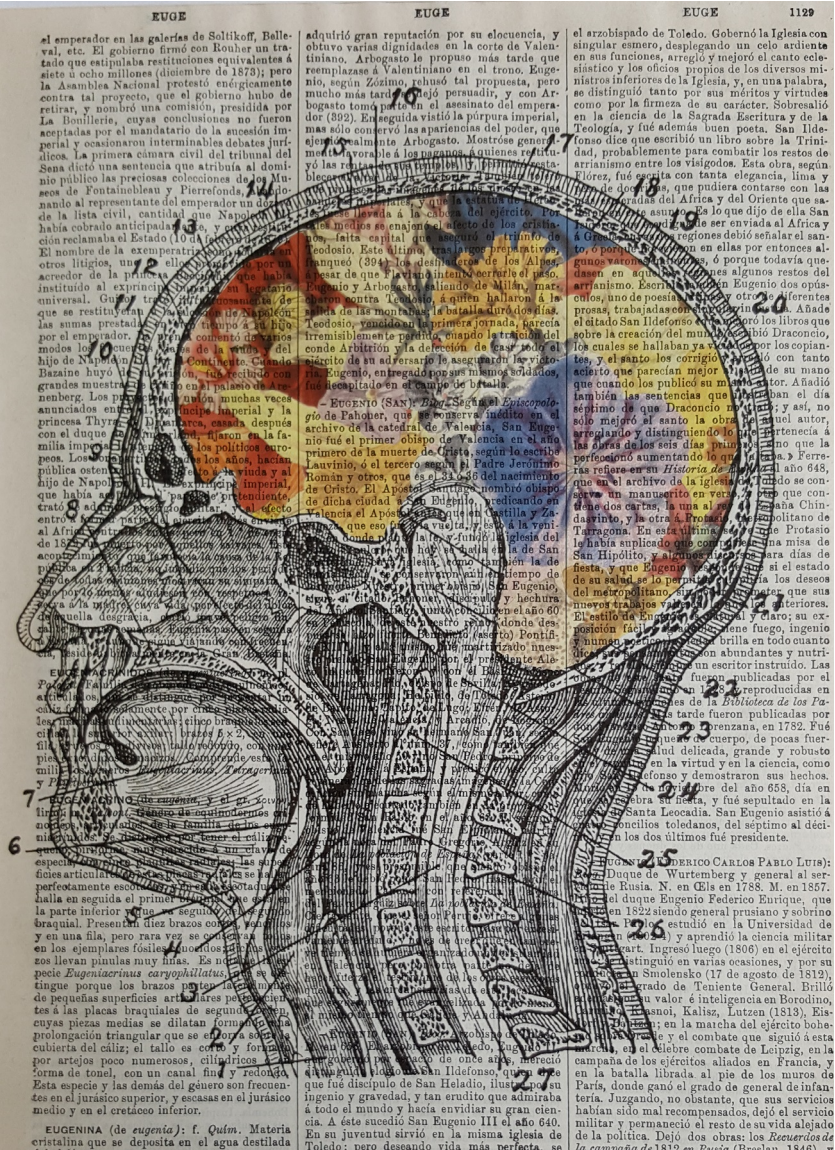
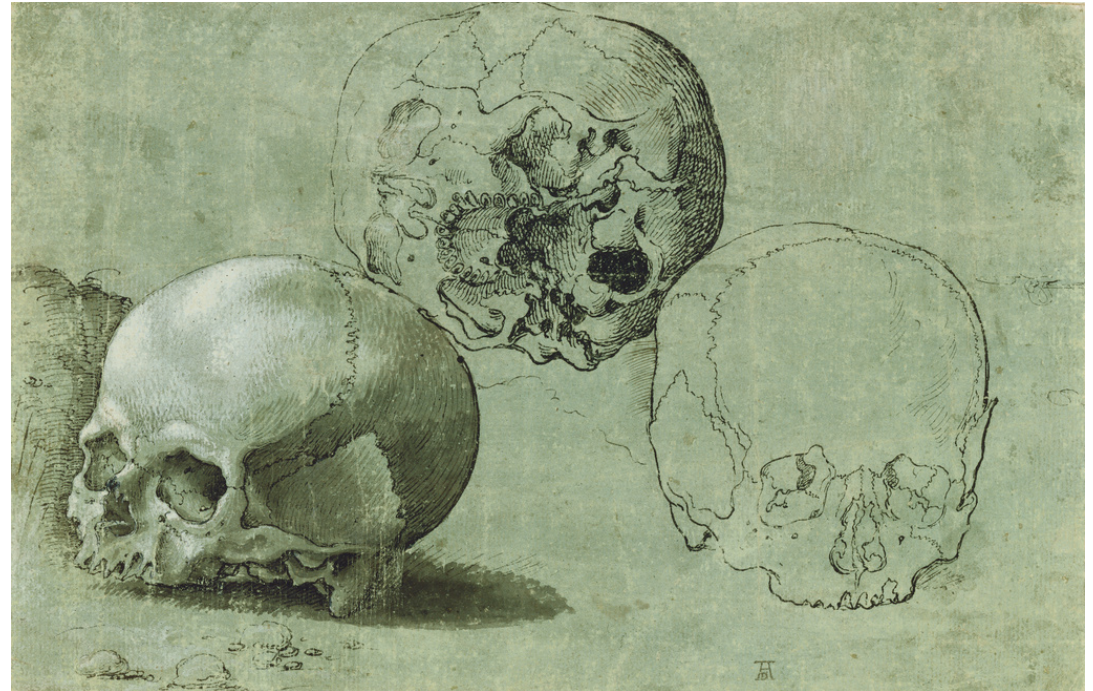


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Cerebral circulation 2017-2-B

Stem: Moving on to Anatomy, we will discuss the blood supply to the brain.			
<p>Question 2</p> <p>Subject: Anatomy</p> <p>CT brain Image (use CBB)</p> <p>LOA: 1</p>	<p>Question:</p> <p>a) What are the main arteries contributing to the blood supply of the brain?</p> <p>b) What are the main cerebral arteries?</p> <p>c) Describe which lobes of the brain they supply.</p> <p>BONUS QUESTION IF TIME PERMITS</p> <p>d) (Which vessels make up the posterior circulation?)</p>	<p>a)</p> <ul style="list-style-type: none"> • Vertebral arteries merging to form the basilar artery • Internal carotid arteries • Anastomosing via the anterior and posterior communicating arteries • To form the Circle of Willis <p>b+c) Some overlap in lobar supply:</p> <ul style="list-style-type: none"> • Anterior cerebral: frontal, parietal lobes • Middle cerebral: frontal, lateral temporal, parietal lobes • Posterior cerebral: medial temporal, parietal, occipital lobes <p>d)</p> <ul style="list-style-type: none"> • Posterior cerebral • Superior cerebellar • (Anterior and posterior) inferior cerebellar • Pontine) 	<p>BOLD to pass</p> <p>Candidates may elect to draw and label the circle of Willis (McMinn p.67)</p>

Cerebral circulation 2016-1-C

Moving onto Anatomy			
Question 2 Cerebral circulation (CT) Subject: Anat LOA: 1	2. What is the arterial supply of the cerebral cortex? Name the corresponding parts they supply (Prompt- demonstrate on the CT)	ACA area anterior to anterior horns lat ventricle (frontal and parietal lobes medially and superiorly) MCA area between the ant & post horns LV (most of lateral surface, parietal, and temporal lobes) PCA area posterior to posterior horn LV (Inferior and medial aspects of occipital and temporal lobes)	Anterior, Middle and posterior cerebral artery with reasonable distribution
	3. Describe the venous drainage of the cerebral hemispheres?	Superior cerebral veins (superolateral surface of the brain) > superior sagittal sinus . Inferior and superficial middle cerebral veins (inferior, posterior and deep aspects of cerebral hemispheres) > straight, transverse and superior petrosal sinuses . Great cerebral vein (midline vein formed from the paired internal cerebral veins) > merges with inferior sagittal sinus to form the straight sinus. Eventually terminate in Internal Jugular veins	General concept

Circle of Willis 2010-1

Question 5:	a. Draw or describe the circle of Willis	IC x 2 → MCAs x 2 and ACAs x 2	a. Identify 3 paired arteries and their origin
Discussion		VAs x 2 → Basilar x 1 → PCAs x 2	
		ACA linked by ant communicating artery	
		PCA each join IC by post comm. Art	
	b. Which part of the brain is supplied by each of the major arteries?	ACA – medial/sup surface of cerebrum except occ	b. Name supplied area of at least one major artery
		MCA – lateral surface and temporal lobes	
		PCA – occipital lobe, inferior cerebrum	

3

Circle of Willis 2006-2

5. Circle of Willis – branches and areas supplied	1. What is the blood supply of cerebral hemispheres?	1. Internal carotids and vertebral arteries 2 circle of Willis optic chiasma and infundibulum 3 posterior- vertebral aa – post cerebral aa 4 anastamosis post. communicating aa 5 internal carotid becomes MCA 6 divides to give anterior cerebral artery 7 anterior communicating artery		
	2. What motor and sensory areas lie in distribution of middle cerebral artery	1 motor and sensory of opposite half of body except legs and perineum 2 auditory and speech areas		

Cranial Nerves III, IV, VI 2011-2

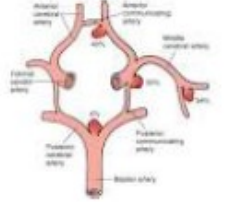
<p>Question 5:</p> <p>Discuss: CN's III, IV, VI</p> <p>LOA 1,2</p>	<p>i. <i>What is the nerve supply to the extra-ocular muscles?</i></p> <p>ii. <i>What other structures are supplied by the III CN?</i></p> <p>Extra question?</p> <p>iii. <i>What is the effect of a complete III N lesion?</i></p>	<p>III = Oculomotor</p> <ul style="list-style-type: none"> - Sup, inf, medial rectus muscles and inf oblique + Levator palpebrae superioris - Parasympathetic thru ciliary ganglion to smooth muscle of sphincter pupillae and ciliary muscle. <p>IV = Trochlear</p> <ul style="list-style-type: none"> - Superior oblique <p>VI = Abducens</p> <ul style="list-style-type: none"> - Lateral Rectus - Resting position = depressed/abducted eye - Ptosis, dilated pupil 	<p>i) Bold to pass</p> <p>ii) Sphincter and ciliary muscle</p> <p>iii) bonus</p>
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TOPIC: CSF _____ **NUMBER:** 5 _____

OPENING QUESTION (if needed)	Describe the circulation of CSF	
POINTS REQUIRED	1 formed in choroidal epithelial cells (plexus) in lateral, 3 rd and 4 th ventricles	3 to pass
	2 lateral ventricles → 3 rd ventricle via intraventricular foramina	
	3 3 rd ventricle → 4 th ventricle via aqueduct	
	4 some CSF passes into subarachnoid space via median and lateral apertures.	
	5 most CSF passes into interpeduncular and quadrigeminal cisterns	
	6 CSF from the various subarachnoid cisterns flows superiorly through sulci and fissures on medial and superolateral surfaces of the cerebral hemispheres. 7 absorbed in arachnoid granulations esp those that protrude into superior sagittal sinus	
PROMPTS	How does CSF flow through the nervous system?	
SECOND QUESTION (if needed)	What are the functions of CSF	
POINTS REQUIRED	1 protects brain by providing cushion effect	1 to pass
	2 buoyancy effect to prevent compression of nerves and vessels	

COMMENTS

CT head 2015-1-D

Stem: A 75 year old woman sustains a head injury following a fall. Her GCS is 13.			
TOPIC	QUESTIONS	KNOWLEDGE (essential in bold)	NOTES
Stem: A CT brain is performed			
Clinical Building Block: CT Brain	What is the major abnormality shown on her CT?	Right sided Subdural with midline shift	Side Subdural
Stem: We will now move onto Anatomy (use the abnormal CT brain for Anatomy)			
Question 1 CT Brain Subject: Anat LOA: 1	1. Could you identify some normal structures on this head CT? 2. What is the arterial supply of the brain?	Lobes: frontal, temporal, parietal, occipital Lat ventricle : anterior and posterior horns; 3 rd ventricle Caudate nucleus; Lentiform nucleus (putamen & globus pallidus) Thalamus; Anterior & posterior limbs of internal capsule Septum pellucidum; Falcx ACA area anterior to anterior horns lat ventricle (frontal and parietal lobes medially and superiorly) MCA area between the ant & post horns LV (most of lateral surface anterior, parietal, and temporal lobes) PCA area posterior to posterior horn LV (Inferior and medial aspects of occipital and temporal lobes)	5 structures 3 major vessels + detail 

Stem: We will now move on to Anatomy. A recent CT brain is available.			
Question 3 CT brain Subject: Anat LOA: 1	1. Identify the intracranial structures visible on this CT (level of anterior & posterior horns lat ventricles)	Lobes: frontal temporal parietal occipital Lat ventricle : anterior and posterior horns 3 rd ventricle, Caudate nucleus, choroid plexus Lentiform nucleus (putamen & globus pallidus) Thalamus , Septum pellucidum, Falx Anterior & posterior limbs of internal capsule Sylvian fissure	Bold to pass Prompt if required
	2. What arteries supply the main areas of the cerebral cortex? Prompt: point	<u>ACA</u> area anterior to anterior horns lat ventricle (frontal and parietal lobes medially and superiorly) <u>MCA</u> area between the ant & post horns LV (most of lateral surface anterior, parietal, and temporal lobes) <u>PCA</u> area posterior to posterior horn LV (Inferior and medial aspects of occipital and temporal lobes)	Ant, Middle and Post CA Reasonable distribution
	3. Describe the venous drainage of the cerebral hemispheres	3. Superior cerebral veins (superolateral surface of the brain) > superior sagittal sinus . Inferior and superficial middle cerebral veins (inferior, posterior and deep aspects of cerebral hemispheres) > straight, transverse and superior petrosal sinuses. Great cerebral vein (midline vein formed from the paired internal cerebral veins) > merges with inferior sagittal sinus to form the straight sinus . Eventually terminate in Internal Jugular veins	2/3 bold

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CT head 2012-1

TOPIC	QUESTIONS	KNOWLEDGE (essential in bold)	NOTES
Question 1: CT Brain LOA: 2	a) Identify anatomical features of the brain shown in this CT scan	Frontal, temporal or parietal (or both) and occipital lobes , including gyri and sulci. Thalamus, internal capsule(ant/post limbs), caudate nucleus Lateral ventricles (ant/post horns), choroid plexus posteriorly Falx cerebri	Bold to pass
	b) Describe the territories that the cerebral arteries supply.	Branches of Circle of Willis: Anterior cerebral a – Frontal lobe , medial and superior surface Middle cerebral a - Temporal lobe and lateral surface Posterior cerebral a - Occipital lobe , inferior surface	All bold

CT head 2010-2

Question 1: CT Head	Identify the non – bony features on this CT scan.	Orbits Temporal lobes in middle cranial fossa Pons 4 th ventricle Cerebellum and vermis	Need temporal lobe, pons and cerebellum
	Which bony sinuses are shown?	Ethmoid, sphenoid, mastoid	2/3
	What is the blood supply of the cerebellum?	Vertebral arteries – basilar artery – post cerebral Ant & post inferior cerebellar art Superior cerebellar art	Need posterior circulation

CT head 2009-2

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
<p>Question 1:</p> <p>X-ray: CT Head</p>	<p>Identify the anatomical features on this CT scan through base of the skull</p>	<p>I.D.:</p> <p>Bones: (occiput, temporal, sphenoid, nasal)</p> <p>Air spaces: (mastoid air cells, sphenoid sinus, ethmoid, nasal cavity)</p> <p>Intracranial: 4th ventricle, cerebellum, vermis, temp lobe, pons)</p>	<p>2 of 4 to pass</p> <p>2 of 4 to pass</p> <p>3 of 5 to pass</p>

CT head 2009-1

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Question 1:	Name the intracranial structures that are visible on this non contrast CT Prompt 4 th Ventricle	Cerebellum (right and left hemispheres united by central vermis). The pons. The 4 th ventricle and pre-pontine cistern. The right & left temporal lobes in the middle cranial fossae. The mastoid, sphenoid and ethmoid sinuses.	Cerebellum, pons & 4 th ventricle to pass.
Question 2:	Describe the posterior circulation of the brain <i>Prompt: What arteries contribute to the posterior circulation of the brain</i>	The vertebral As (originating from the subclavian As) give off the post and ant inf cerebellar As then unite (at the caudal border of the pons) to form the basilar A. The basilar A ascends to the superior border of the pons giving off the sup cerebellar A. It terminates by dividing into the 2 post cerebral As. The post communicating As join the post cerebral As to the middle cerebral A (& hence to the ant circulation).	Vertebral, basilar, post cerebral and post communicating As to pass.
Question 3:	What areas of the brain do the main arteries of the posterior circulation supply	Vertebral As -> cranial meninges & cerebellum. Basilar A -> brainstem, cerebellum & cerebrum. Post cerebral As -> inf aspect of cerebral hemispheres & occipital lobe. Post communicating As -> optic tract, cerebral peduncle, int capsule & thalamus.	Must correctly identify that the vertebral and basilar As -> cerebellum and post cerebral As -> inf of the cerebral hemispheres to pass.

CT head 2007-2

TOPIC: PICTURE: CT SCAN BRAIN _____ **NUMBER:** 1 _____

OPENING QUESTION	Name the visible intracranial structures on this non contrast CT scan	COMMENTS
POINTS REQUIRED	1 Lobes (frontal, parietal/temporal, occipital)	6 structures from 1st 5
	2 lateral ventricles (anterior and posterior horns)	
	3.choroid plexus	
	4 pineal gland	
	5 thalamus	
	6 internal capsule, basal ganglia, caudate, globus pallidus, putamen, sylvian fissure or lateral sulcus	Plus 1 of these for pass
PROMPTS		
SECOND QUESTION (if needed)	What structures does CSF pass through to reach the base of the brain?	
POINTS REQUIRED	1 Lateral ventricles →interventricular foramen	3 rd and 4 th ventricles in sequence to pass
	→ 3 rd ventricle	
	→ aqueduct	
	→ 4 th ventricle (posterior to pons/medulla)	
PROMPTS	Start at the lateral ventricle	

CT head 2007-2

TOPIC: PICTURE: CT SCAN BRAIN _____ **NUMBER:** 1 _____

OPENING QUESTION	Name the visible intracranial structures on this non contrast CT scan	COMMENTS
POINTS REQUIRED	1 Lobes (frontal,parietal/temporal,occipital)	6/9 structures from 1st 5
	2 lateral ventricles (anterior and posterior horns)	
	3.choroid plexus	
	4 pineal gland	
	5 thalamus	
	6 internal capsule, basal ganglia, caudate, globus pallidus, putamen, sylvian fissure or lateral sulcus	Plus 1 of these for pass
PROMPTS	If too general "Be more specific"	
SECOND QUESTION (if needed)	Demonstrate the areas supplied by the middle cerebral artery and describe the function of these areas?	
POINTS REQUIRED	1 Lateral surfaces of both cerebral hemispheres excluding anterior part of frontal lobe and occipital lobe, including basal ganglia but not thalamus	Pass if identify that occ. + most fr. lobes are not MCA
PROMPTS		

Extraocular muscles 2017-1-B

Stem: Moving onto Anatomy. His eye movements are examined.			
Question 5 Model Extraocular muscles (F13) Subject: Anat LOA 1	a) Identify the extraocular eye muscles on this model.	Superior rectus Inferior rectus Medial rectus Lateral rectus Superior oblique Inferior oblique	All to pass.
	b) Describe their actions	b) Recti <ul style="list-style-type: none"> • Superior (elevation, adduction, medial rotation) • Inferior (depression, adduction, lateral rotation) • Medial (adduction) • Lateral (abduction) Obliques <ul style="list-style-type: none"> • Superior (depression, abduction) • Inferior (elevation, abduction) 	5 muscles described to pass.
	c) What nerves supply these muscles?	c) Oculomotor (CN III) Nerve to all, except: Abducens (CN VI) Nerve to Lateral Rectus Trochlea (CN IV) Nerve to Superior Oblique	2/3 to pass
	d) How are the actions of these muscles tested clinically? BONUS QUESTION	d) Abduction (Lateral Rectus) <ul style="list-style-type: none"> • Elevation (Superior rectus) • Depression (Inferior Rectus) Adduction <ul style="list-style-type: none"> • Elevation (Inferior Oblique) • Depression (Superior Oblique) 	Abduction isolates recti and adduction isolates obliques to pass

Extraocular muscles 2016-2-C

Stem: Moving onto Anatomy. You notice eye deviation during the seizure															
Question 3 Eye (model) Subject: Anatomy LOA: 1	Name and identify the extrinsic muscles of the eye What is the innervation of each muscle?	<table><tr><td>Superior rectus</td><td>(III oculomotor)</td></tr><tr><td>Inferior rectus</td><td>(III oculomotor)</td></tr><tr><td>Medial rectus</td><td>(III oculomotor)</td></tr><tr><td>Lateral rectus</td><td>(VI abducent)</td></tr><tr><td>Superior oblique</td><td>(IV troclear)</td></tr><tr><td>Inferior oblique</td><td>(III oculomotor)</td></tr></table> <p>(Superior, medial, inferior and lateral rectus arise from common tendinous ring (surrounding optic canal) Superior oblique arises from the body of the sphenoid, passes forward above the medial rectus and gives way to a slender tendon which passes through the trochlea (pulley). Then turns backwards and laterally and passes under the sup rectus to insert into posterosuperior lateral quadrant of sclera.</p>	Superior rectus	(III oculomotor)	Inferior rectus	(III oculomotor)	Medial rectus	(III oculomotor)	Lateral rectus	(VI abducent)	Superior oblique	(IV troclear)	Inferior oblique	(III oculomotor)	Bold
Superior rectus	(III oculomotor)														
Inferior rectus	(III oculomotor)														
Medial rectus	(III oculomotor)														
Lateral rectus	(VI abducent)														
Superior oblique	(IV troclear)														
Inferior oblique	(III oculomotor)														
	What movements are generated by these muscles ? <														

Extraocular muscles 2012-2

<p>Question 4 Model Extraocular muscles LOA: 1</p>	<p>Identify the muscles responsible for eye movement and describe their function</p> <p>What is the nerve supply to these muscles?</p> <p>What are the effects of an oculomotor nerve palsy?</p>	<p>Supr (elev, add), medial, inferior (dep, add), lateral rectus Superior oblique (dep, abd) and Inf (elev, abd) oblique.</p> <p>Oculomotor (III) N to all, except Abducent (VI) N (Lat Rectus) and Trochlear (IV) to Supr oblique.</p> <p>Dep and Abd – dilated pupil, ptosis.</p>	<p>All bold</p> <p>3rd N and one other to pass</p>
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Extraocular muscles 2007-2

TOPIC: Eye: extraocular muscles & innervation _____ **NUMBER: 3** _____

OPENING QUESTION	Using this model, what are the extraocular muscles of the eye	COMMENTS
POINTS REQUIRED	1 Levator palpebrae superioris: deep layer Sup. Tarsal (NOT on model)	4 recti and 2 obliques to pass
	2 Recti x 4 (sup, Inf, Med, Lat)	
	3 Obliques x 2 (Sup, Inf)	
PROMPTS		
SECOND QUESTION (if needed)	What is the nerve supply to these muscles	Nerve supply to recti and obliques to pass
POINTS REQUIRED	1 Lev: Oculomotor (III); deep layer (superior tarsal) - sympathetic	
	2 SO – IV (trochlear)	
	3 LR – VI (abducens)	
	4 All others - III	
PROMPTS		
THIRD QUESTION (if needed)	What is the action of inferior oblique?	
POINTS REQUIRED	1 adduction, elevates and laterally rotates	

Extraocular muscles 2005-1

TOPIC: Eye Movements _____ **NUMBER:** 1-2 _____

OPENING QUESTION	Using this model, identify the muscles that move the eyeball	COMMENTS
POINTS REQUIRED	1 Sup rectus	6 of 6 to pass
	2 Inf rec	
	3 Lat Rectus	
	4 Med Rectus	
	5 Sup Oblique	
	6 Inf Oblique	
	7	
PROMPTS		
SECOND QUESTION (if needed)	Describe the nerve supply to these muscles	3 of 3 to pass
POINTS REQUIRED	1 Lateral Rectus – VI	
	2 Sup Oblique – IV	
	3 All the rest - III	
	4	
	5	
	6	
PROMPTS		
THIRD QUESTION (if needed)	What is the effect of a IV th nerve lesion?	2 to pass
POINTS REQUIRED	1 Loss Sup Oblique	
	2 Inability to look down when looking in (walk down stairs, reading)	
	3 Extorsion -- compensate by tilting to opposite shoulder	
	4	
PROMPTS		

Eye 2006-2

2. Model – eye Eye structure and control of pupillary reflexes	1. Using the model, describe the structures of the eye	1. vitreous body 2. lens 3. ant & post chambers (aqueous humour) 4. iris 5. pupil	Prompt: if pin was stuck through this part of the eye (no.3), which struct. would it pass through	
	2. Describe the structure of the walls of the eyeball (point to sclera)	Fibrous – cornea, conjunctiva, sclera Uveal tract (vasc) – choroid, ciliary body, iris Nervous – retina, optic disc, macula		
	3. Describe the pupillary light reflex arc. (May leave this qu for later)	<u>1. Light</u> – retina, optic n, pretectal nucleus, – both E-W nuclei, – parasymp, CNIII to ciliary ganglion, short ciliary nn – sphincter pup. Dilator pup. – cervical symp, via int carotid a, CNVa, nasociliary nn, long ciliary nn		

Eye 2006-1

TOPIC: Eye - structures and drainage of aqueous humour **NUMBER:** Th AM 3

OPENING QUESTION	Identify the structures of the eyeball	COMMENTS
POINTS REQUIRED	1 cornea	
	2 anterior chamber/ lens/ iris/ciliary body/limbus	
	3 vitreous body	
	4 choroid	
	5 sclera	
	6 retina	
	7 optic nerve/disc	
PROMPTS		7/10 to pass
SECOND QUESTION (if needed)	Describe the formation and drainage of aqueous humour	
POINTS REQUIRED	1 production by ciliary processes (capillary diffusion)	
	2 enters post chamber	
	3 passes thru pupil to anterior chamber	
	4 filters thru iridocorneal angle to Canal of Schlemm	
	5 drains into anterior scleral veins	
	6	
PROMPTS		OK to pass
THIRD QUESTION (if needed)		
POINTS REQUIRED	1	
	2	
	3	
	4	
	5	
PROMPTS		

Eye movement 2014-2-D

Stem: Moving on to anatomy. He has abnormal eye movement			
Question 3 Eye (Model) – (model no. F 13) Subject: Anat LOA: 2	Identify the muscles responsible of eye movement.	Recti: Superior (elev, add, med rot); Inferior (dep, abd, lat rot); Medial (add); Lateral (abd)	All Bold to pass
	Describe their actions.	Obliques: Superior (dep, abd); Inferior (elev, abd)	
	What nerves supply these muscles?	Oculomotor (III) N to all, except Abducent (VI) N to Lateral R, and Trochlear (IV) N to Sup Obl	Bold plus one to pass
	How are the actions of these muscles tested clinically? <i>Prompt: Why is the “H” pattern used?</i>	In Abd (LR): Elev (SR) and Dep (IR) In Add (MR): Elev (IO) and Dep (SO)	abd and add isolates recti and obliques to pass

30

Face 2005-1

TOPIC: Face photo _____ **NUMBER:** 3-5 _____

OPENING QUESTION	Identify the major structures in this picture	COMMENTS
POINTS REQUIRED	1 Temporal	10 structures to pass
	2 Zygomatic	
	3	
	4	
	5	
	6	
	7	
PROMPTS		
SECOND QUESTION (if needed)	If needed - Identify all the branches of the facial nerve	
POINTS REQUIRED	1 Temporal	4 to pass
	2 Zygomatic	
	3 Buccal	
	4 Marginal Mandibular	
	5 Cervical	
	6	
PROMPTS		

Face XR 2010-1

TOPIC	QUESTION	ESSENTIAL KNOWLEDGE	NOTES
Question 1: Xray:Facial	<p>(a) Demonstrate the walls of the orbit on this xray and name the bones that form them.</p> <p>Prompt: What bone forms each wall?</p> <p>(b) Demonstrate the position of the infra-orbital nerve on this xray.</p> <p>(c) What structures does the infra-orbital nerve innervate?</p>	<p>Roof – orbital part of frontal b and posteriorly the lesser wing of the sphenoid.</p> <p>Medial- ethmoid with contributions from frontal process of maxilla, lacrimal and sphenoids</p> <p>Lateral – frontal process of zygomatic b and the greater wing of sphenoid</p> <p>Floor – Maxilla and partly by zygomatic and palatine bone</p> <p>Mucosa of max sinuses</p> <p>Upper medial teeth (Premolars, canines, incisors)</p> <p>Skin of cheek</p> <p>Skin of lateral nose</p> <p>Skin/conjunctiva of inferior eyelid</p> <p>Anteroinferior nasal septum</p> <p>Skin and oral mucosa of upper lip</p>	<p>All 4 walls and</p> <p>Frontal</p> <p>Maxilla</p> <p>Ethmoid</p> <p>Zygomatic</p> <p>Need Bold to pass</p> <p>Demonstrate region of infra-orbital foramen/notch</p> <p>Bold to pass</p>

Face XR 2009-1

Question 1 (Photo)	Identify the bones visible on this x ray? (prompt to stay above C spine if needed) Prompt: what are the other facial bones that may not be visible	Frontal** Nasal Maxilla ** Zygoma** Sphenoid Mandible** Lacrimal Vomer Ethmoid	Need 5 to pass frontal, mandible, maxilla, zygoma Plus one other
Question 2: (photo)	Identify the sinuses on this X-ray	<ul style="list-style-type: none"> • Frontal • Maxillary • Ethmoid • Mastoid ** (prompt if necessary) 	3/4 to pass
Question 3: (photo)	Name this structure (point to infra orbital foramen). What passes through it, and what does it supply?	<ul style="list-style-type: none"> • Infra orbital nerve • Mucosa of max sinuses • premolars, incisors, canines • skin of cheek • skin of lat nose • skin/conjunctiva of inf eyelid • ant/inf nasal septum • Skin of upper lip 	3 to pass

TOPIC: Facial X-ray _____ **NUMBER: 2.2** _____

OPENING QUESTION	On this Xray, please demonstrate the walls of the orbit and name the bones that form them	COMMENTS
POINTS REQUIRED	Orbit is a bony cavity like a 4 sided pyramid lying on its side with optic canal at apex	Need to demonstrate all 4 walls to pass
	<u>Roof</u> -Frontal bone* and posteriorly the lesser wing of sphenoid	*essential
	<u>Medial wall</u> - Frontal process of maxilla, backward across the lacrimal bone and the orbital plate of the ethmoid* to body of sphenoid	
	<u>Lateral wall</u> - Zygomatic bone* and the greater wing of sphenoid	
	<u>Floor</u> - Orbital surface of the maxilla* and laterally by the zygomatic bone	
PROMPTS		
SECOND QUESTION (if needed)	Please demonstrate the position of the infra-orbital nerve on this X-ray. Please describe the distribution of the infra-orbital nerve ?	
POINTS REQUIRED	1 Sensory nn from	Need to demonstrate region of infraorbital foramen/notch
	2 lower eyelid, nose	* essential
	3 cheek*, maxillary sinus	
	4 upper lip*, upper gums and teeth	
PROMPTS		

TOPIC: Facial X-ray _____ **NUMBER: 2.2** _____

OPENING QUESTION	On this Xray, please demonstrate the walls of the orbit and name the bones that form them	COMMENTS
POINTS REQUIRED	Orbit is a bony cavity like a 4 sided pyramid lying on its side with optic canal at apex	Need to demonstrate all 4 walls to pass
	<u>Roof</u> -Frontal bone* and posteriorly the lesser wing of sphenoid	*essential
	<u>Medial wall</u> - Frontal process of maxilla, backward across the lacrimal bone and the orbital plate of the ethmoid* to body of sphenoid	
	<u>Lateral wall</u> - Zygomatic bone* and the greater wing of sphenoid	
	<u>Floor</u> - Orbital surface of the maxilla* and laterally by the zygomatic bone	
PROMPTS		
SECOND QUESTION (if needed)	Please demonstrate the position of the infra-orbital nerve on this X-ray. Please describe the distribution of the infra-orbital nerve ?	
POINTS REQUIRED	1 Sensory nn from	Need to demonstrate region of infraorbital foramen/notch
	2 lower eyelid, nose	* essential
	3 cheek*, maxillary sinus	
	4 upper lip*, upper gums and teeth	
PROMPTS		

Facial Bone CT 2014-1-B

Stem: Moving now to your anatomy question. The mother has a seizure and falls to the ground hitting her head and face.			
Question 4 Facial Bone CT Subject: Anat LOA: 2	1. What air filled structures are visible on this CT? 2. What other structures are visible? 3. What structure passes through the infra-orbital foramen? 4. What is its sensory distribution?	1. Maxillary , mastoid, ethmoidal 2. Bones: Frontal, zygoma, ethmoid, nasal septum, maxilla, nasal concha (middle and inferior), crista galli, Other: orbit, ocular muscles, frontal lobe (coronal slice), temporal lobe and parieto-occipital lobe, 3. Infra-orbital nerve 4. superior lip, lateral nose, cheek, inferior eyelid, upper teeth and gingiva	bold and 1 other 2 bones and 3 others. Bold 2

Facial Muscles 2003-2

TOPIC 4		COMMENTS
QUESTIONS AND POINTS REQUIRED	Demonstrate the muscles of facial expression as seen on this photograph.	Orbicularis oculi, orb oris, zygomaticii, buccinator, - $\frac{3}{4}$ to pass.
	Demonstrate the branches of the facial nerve which can be seen on this photograph.	Temp, Zyg, Buccal, Marg Mandib, Cervical – 3/5 to pass.
	Bonus Demonstrate the muscles of mastication.	

Facial Nerve 2012-2

<p>Question 3</p> <p>Photo</p> <p>Extracranial facial nerve</p>	<p>Name the branches of the facial nerve and indicate their position in the photo</p> <p>What is its main function?</p> <p>What else does it supply?</p>	<p>Forms parotid plexus in gland with 5 branches</p> <p>5 Buccal 15 Marginal mandibular, 25 Temporal, 27 Zygomatic , cervical (not seen)</p> <p>Motor nerve to muscles of expression + digastric, stylohyoid & stapedius</p> <p>taste anterior 2/3 tongue, skin close to external acoustic meatus, lacrimal gland, sublingual and submandibular glands</p>	<p>4 of 5</p> <p>Prompt if necessary by Bold to pass</p> <p>Must note one</p>
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Facial Nerve 2010-2

<p>Question 5:</p> <p>Discussion: Facial Nerve</p>	<p>What is the motor supply of the muscles of facial expression?</p> <p>Describe its course.</p> <p>Discuss the non motor component of the facial nerve.</p>	<p>7th cranial nerve</p> <p>Temporal bone Stylomastoid foramen -posterior auricular</p> <p>Parotid gland - temporal - zygomatic - buccal - marginal mandibular - cervical</p> <p>Intermediate nerve Taste join lingual nerve ant 2/3 tongue Parasympathetic Somatic sensory</p>	<p>Facial n and 3 terminal branches</p> <p>Bonus question.</p>
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Facial Nerve 2006-2

<p>5. Facial n. – intracranial innervation and terminal branches</p>	<p>1. What are the terminal branches of the facial n.?</p> <p>2. What other branches are there of this nerve? (what else does it supply)</p>	<p>T Z B M C</p> <p>Special sensory, lacrimal, salivary, stapedius. If doing well sensory supply of tongue (touch and taste, chorda tympani)</p> <p>If needing more fillers – innervation of frontalis at UMN level v rest of facial muscles.</p>		
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Facial Nerve 2005-2

TOPIC: Photo: FACE _____ **NUMBER: 1.4** _____

OPENING QUESTION	Please identify the branches of the facial nerve on this photograph.	COMMENTS
POINTS REQUIRED	1 Temporal, 2 zygomatic, 3 buccal, 4 mandibular, 5 cervical	Must name all 5, must identify 3/5 to pass
PROMPTS		
SECOND QUESTION	Please identify and name some facial muscles innervated by the facial nerve.	
POINTS REQUIRED	1 Temporal > frontalis, auricularis	Identify 2/5 to pass
	2 Zygomatic > orbicularis oculi*, zygomaticus major, zygomaticus minor	
	3 Buccal > buccinator, nose, upper lip	
	4 Mandibular > orbicularis oris*, depressor anguli oris	
	5 Cervical > platysma	
PROMPTS		
THIRD QUESTION	Please describe the course of the facial nerve once it exits the skull base.	
POINTS REQUIRED	1 Through stylomastoid foramen*, near origin of digastric,	*essential to pass
	2 then divides into superior and inferior divisions	
	3 before entering the posteromedial surface of the parotid gland*.	
	4 within which it forms pes anserinus & divides into 5 br.	

Mandible 2017-1-A

Stem: Moving onto Anatomy.			
Question 2 Mandible (bone)	a) Demonstrate the features of this bone.	a) Body, angle, ramus, condyle (includes head & neck), coronoid process, pterygoid fossa, mandibular notch, lingula, mylohyoid groove, submandibular fossa, sublingual fossa, symphysis, mental protuberance, alveolar processes, mental tubercles, digastric fossa, mental spines	4/5 Bold plus 1 other
Subject: Anatomy	b) Which nerve passes within this bone and demonstrate the entry and exit points.	b) Inferior alveolar nerve enters mandibular foramen, (within mandible supplies mandibular teeth), and exits mental foramen as mental nerve (supplies skin + mucous membranes lower lip, skin of chin.	Bold to pass
LOA: 1	c) What nerve does the inferior alveolar nerve arise from?	c) Mandibular nerve (V3 – 3 rd branch of trigeminal n)	

Mandible 2008-1

OPENING QUESTION	Demonstrate the features of the mandible?	COMMENTS
POINTS REQUIRED	1 Condylar process (head & neck)	5 = pass
	2 Ramus, notch	10 = 10
	3 Coronoid process	
	4 Angle	
	5 Mental & Mandibular foramen	
	6 Mental tubercle and symphysis	
	7 Alveolar process	
PROMPTS	Indicate features and ask	
SECOND QUESTION (if needed)	Describe the features of the Temporomandibular Joint?	
POINTS REQUIRED	1 Bones – condyle of mandible, articular tubercle & Mandibular fossa	2 = pass
	2 Disc – separates superior synovial cavity (gliding in/out) and inferior synovial cavity (hinge up/down)	Superior & inferior cavities = pass
	3 Postglenoid tubercle and Temporomandibular (lateral) ligament prevent posterior dislocation	
	4 Stylomandibular and Sphenomandibular ligaments weak.	
PROMPTS	Questions – bones, synovial cavities, ligaments	
THIRD QUESTION (if needed)	Describe the mandibular attachments of the muscles of mastication?	Ask only if doing well and sufficient time
POINTS REQUIRED	1 Temporalis – temporal fossa to medial coronoid & anterior ramus	2 to pass
	2 Masseter – maxillary process & zygomatic arch to angle & lateral ramus	
	3 Lateral Pterygoid – greater wing sphenoid and lateral surface Lateral Pterygoid Plate to joint capsule, disc & Pterygoid fossa on neck of mandible	
	4 Medial Pterygoid – medial surface Lateral Pterygoid Plate & tuberosity of maxilla to medial ramus below foramen	
PROMPTS	Nil	

COMMENTS Must pass questions 1 & 2 to pass overall

Mandible 2005-1

TOPIC: Mandible _____ NUMBER: 3-2 _____

OPENING QUESTION	Can you demonstrate where the muscular attachments to the Mandible would be?	COMMENTS
POINTS REQUIRED	1 Masseter	4 to pass
	2 Temporalis	
	3 2 Medial pterygoid	
	4 Lat pterygoid	
	5 Mylohyoid	
	6 Digastric	
	7 depressors of face (labii inferioris, anguli oris)	
PROMPTS		
SECOND QUESTION (if needed)	What movements is the mandible capable of at the TMJ?	3 to pass
POINTS REQUIRED	1 Protraction/retraction (also called protrusion/retrusion)	
	2 depression/elevation (opening/closing)	
	3 side-to-side	
	4	
	5	
	6	
PROMPTS		
THIRD QUESTION (if needed)	What factors contribute to the stability of the TMJ?	3 basic components to pass
POINTS REQUIRED	1 Shape of TMJ	
	2 Occlusion: Teeth	Bonus
	3 Stylomandibular Ligament	
	4 Spheno mandibular ligament	
	5 Capsule of Joint	
	6 Muscles of Mastication	
PROMPTS		

Mandibular Nerves 2013-D

Stem: Moving on to Anatomy: You are planning to do a nerve block to relieve her pain.			
ANATOMY Question 2 LOA: 2	1. Which Nerves run on or within the bony mandible	Inf alveolar /mental N (V3- mandibular) Lingual N ((V3+ chorda tympani) + 1 other of Auriculotemporal N (V3) N to mylohyoid (V3- branch of inf alveolar) Mandibular branch of the facial N (VII)	Bold to pass
	2. Show the course of the inferior alveolar N on this mandible and why it is prone to injury?	Early large branch of mandibular trigeminal after it exits the Foramen ovale, runs on surface of inside mandible ramus to Mandibular foramen , (gives off N to mylohyoid), Passes inf and ant thru bone in alveolar canal which is v close to roots of 3rd molar supplying all lower teeth and exits as (mental N) from mental foramen ant/ superior (in edentulous)	
	3. Why is it prone to injury?	Close relationship to bony mandible	
	4. If the lingual N is damaged what deficits would you expect?	Ant 2/3 tongue- taste + sensory loss (via the chorda tympani) Loss of secretory function –submandibular salivary glands Sensory loss to floor of mouth and/ or to gums	

Nerve Supply of face 2012-1

<p>Question 5 Nerve supply to face LOA: 2</p>	<p>a) What is the sensory supply of the face? (Prompt: what nerves supply skin sensation on the face?)</p> <p>b) What is the motor supply to facial muscles (Prompt: muscles of facial expression)</p>	<p>Trigeminal nerve branches: Ophthalmic; supratrochlear, supraorbital, infratrochlear, ext nasal, lacrimal..line from angle of eye, dorsum nose Maxillary; Zygomatic (temporal, facial), infraorbital, lat. nose Mandibular; auric temporal, buccal, mental Small supply to angle of jaw from great auric Facial nerve, motor root: Emerges from stylo mastoid foramen, and engulfed by parotid 5 motor branches: Temporal (above eyes) Zygomatic (below eyes) Buccal (upper lip) Marginal mandibular (lower lip) Cervical (platysma, neck)</p>	<p>Bold required</p> <p>3 of 5 branches required</p>
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Orbit 2010-2

<p>Question 2:</p> <p>Bone: SKULL</p>	<p>Show me which bones make up the orbital rim?</p> <p>Describe the course of the infra-orbital nerve?</p> <p>What does the infra-orbital nerve supply?</p>	<p>Orbital rim: Frontal, Zygomatic, Maxilla</p> <p>Entrance into the orbit via the inferior orbital fissure Traverses infra-orbital groove and canal in orbital floor. Emerges via infraorbital foramen</p> <p>Mucosa of maxillary sinus; premolar, canine, and incisor maxillary teeth; skin and conjunctiva of inferior eyelid; skin of cheek, lateral nose, and anteroinferior nasal septum; skin and oral mucosa of superior lip.</p>	<p>Pass Criteria: Need 2/3</p> <p>Need Inferior orbital foramen</p> <p>Need cheek, superior lip, upper teeth</p>
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Orbit 2008-2

<p>Question 2:</p> <p>Bone skull</p>	<p>Demonstrate the bones that make up the orbit.</p> <p>What are the names of these anatomical features?(pointing to sup and inf orbital fissures)</p> <p>What structures pass through the superior orbital fissure?</p> <p>Demonstrate the course of the infra orbital nerve and its' distribution.</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 > infraorbital groove. Exits through infraorbital foramen. Distribution to cheek, lower lid, lateral nose, upper lip and gums and antero/inf nasal septum</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>
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Sensation of Ear 2006-1

TOPIC: Face – Sensory distribution to the ear _____ **NUMBER:** _____ **FR #** 4

OPENING QUESTION	Identify the sensory supply to the pinna	COMMENTS
POINTS REQUIRED	1 Greater auricular nerve (C2) Cranial surface and lower half	
	2 Auriculotemporal Upper half (V3) and most of the meatus	1 of 2 to pass
	3	
	4	
	5	
	6	
	7	
PROMPTS		
SECOND QUESTION (if needed)	What other nerves supply the ear and the canal.	
POINTS REQUIRED	1 Lesser occipital	
	2 Vagus	
	3 Glossopharyngeal	
	4. Facial nerve allowing for the tympanic membrane	2 of 4 to pass
PROMPTS		
THIRD QUESTION (if needed)		
POINTS REQUIRED		
PROMPTS		

Skull 2004-2

TOPIC: Skull _____ **NUMBER:** 2.2 _____

OPENING QUESTION	Identify the bones and sutures of the cranial vault	COMMENTS
POINTS REQUIRED	1 Frontal Bone	
	2 Parietal Bone (2)	
	3 Occipital Bone	
	4 Temporal Bone (2)	
	5 Sphenoid Bone (2)	
	6 Coronal Suture	
	7 Sagittal Suture	
PROMPTS	8 Lambdoid Suture	
SECOND QUESTION (if needed)	Demonstrate where the infraorbital nerve exits the skull and the area of supply	
POINTS REQUIRED	1 Infraorbital Foramen	
	2 Palpebral – Lower Eyelid & face	
	3 Nasal – Side & ala of nose	
	4 Labial – Skin & mucous membrane upper lip, upper gum to 2 nd molar	
	5	
	6	

Skull foramina 2014-2-A

Stem: An 80 year old man is brought by ambulance to ED following a syncopal episode with a head injury. You suspect a base of skull fracture.			
TOPIC	QUESTIONS	KNOWLEDGE (essential in bold)	NOTES
Question 1 Bone – Base of skull Subject: Anat LOA: 2	1. What are the major bony compartments within the Base of Skull and what are the major bones forming them?	Anterior cranial fossa – frontal bone (ant), ethmoid (mid) and lesser wing of Sphenoid (post). Middle cranial fossa – Sphenoid plus Squamous Temporal laterally, contains Sella Turcica. Posterior cranial fossa – Occipital Bone plus dorsum sella of Sphenoid anteriorly.	Needs skull model as prop Must identify all 3 fossae plus identify major bone in each.
	2. Identify the various foramina in the Base of Skull.	ACF: Cribriform Plate – Olfactory N, MCF: Optic Canal – Optic N, Ophthal A Superior Orbital Fissure – CN III, IV, VI Foramen Lacerum – Int Carotid A plus associated sympathetic Internal acoustic meatus – CN VII, VIII plus labyrinthine a Foramen Rotundum – V2 Foramen Ovale – V3, accessory meningeal A Foramen Spinosum – middle meningeal A Groove for Petrosal N and Petrosal Br Middle Meningeal A PCF: Foramen Magnum – Medulla/Brainstem , plus vert a, XI Jugular Foramen – CN IX, X, XI, sup bulb of IJV Hypoglossal Canal – CN XII Condylar Canal – emissary veins (sigmoid sinus) Mastoid Foramen – Mastoid emissary vein.	Must identify 5 foramina.
	3. What structures pass through the foramen magnum?		Bold to pass

Tongue nerves 2008-1

OPENING QUESTION	On this model, identify structures that make up the floor of the mouth.	COMMENTS
POINTS REQUIRED	Mandible; tongue; lip; teeth; geniohyoid muscle; hyoid bone; stylohyoid muscle; genioglossus muscle	Four structures to pass
SECOND QUESTION (if needed)	Describe the innervation of the tongue	
POINTS REQUIRED	1 Motor ; All nn except palatoglossus innervated by CN 12 (Hypoglossal nn) Palatoglossus is actually a palatine mm, therefore supplied by pharyngeal plexus	To pass ; 1) Hypoglossal main motor 2) Lingual ant 2/3 sensation 3) Chorda tympani ant 2/3 taste
	2 General Sensation ; (touch and temperature) ; mucosa of anterior 2/3 supplied by lingual nn (branch of CN V 3 Mandibular). Taste for ant 2/3 (EXCEPT for vallate papillae) is via chorda tympani nn (branch of CN VII). The chorda tympani joins the lingual nn and runs anteriorly in it's sheath. Posterior 1/3 of tongue and vallate papillae, BOTH general sensory to mucous membrane and taste are supplied by the lingual branch of glossopharyngeal nn (CN IX)	
	3 Twigs of internal laryngeal nn (branch of vagus) supply mostly eneral but some special sensation to a small area of tongue just anterior to epiglottis. These mostly sensory fibres also carry parasympathetic secretomotor fibres to serous glands of tongue	
	4 parasympathetic fibres from chorda tympani travel with lingual nn to submandibular and sublingual salivary glands. These nn fibres synapse in the submandibular ganglion which hangs from the lingual nn.	
THIRD QUESTION (if needed)		
POINTS REQUIRED		
	5	
	6	
PROMPTS		

COMMENTS

Trigeminal Nerve 2011-2

<p>Q 5 :</p> <p>Discuss: Trigeminal Nerve (CN V)</p> <p>LOA 1</p>	<p><i>What are the main branches of the trigeminal nerve</i></p> <p><i>Describe the motor and sensory distribution of the trigeminal nerve</i></p> <p><i>Bonus Question:</i> <i>Which nerve branch would you anaesthetize before repairing a lower lip laceration</i></p>	<p>Ophthalmic (V₁) : sensory Maxillary (V₂) : sensory Mandibular (V₃) : sensory & motor</p> <p>Motor</p> <ul style="list-style-type: none"> - muscles of mastication (<i>masseter, temporalis, medial pterygoid, lateral pterygoid</i>) - mylohyoid - anterior belly of digastric - tensor tympani - tensor veli palatini <p>Sensory</p> <ul style="list-style-type: none"> - skin of face and anterior scalp - eyelids / cornea / conjunctiva - nose / mucosa of nasal cavity - paranasal sinuses - ear - mouth / lip / gingiva / palate - tongue (taste to anterior 2/3) - dura of anterior & middle cranial fossa <p>Other (extra info)</p> <ul style="list-style-type: none"> - distributes postsynaptic parasympathetic fibers of head to their destinations <p>Mental nerve - as it emerges from mental foramen (terminal branch of inferior alveolar nerve, which in turn is a branch of mandibular division).</p>	<p>Bold to pass</p> <p>Motor : bold + 1 other. Extra for naming all</p> <p>Sensory : bold + 4 others</p> <p>Description by division of nerve acceptable.</p> <p>Bold to pass</p>
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Trigeminal Nerve 2003-1

TOPIC: SENSORY INNERVATION OF FACE _ NUMBER: 5 (PM) _____

OPENING QUESTION	DESCRIBE THE SENSORY INNERVATION OF THE FACE	COMMENTS
POINTS REQUIRED	3 DIVISIONS OF TRIGEMINAL NERVE – OPTHALMIC, MAXILLARY & MANDIBULAR	ALL 3
	5 BRANCHES OPTHALMIC	EXTRA FOR BRANCHES
	3 BRANCHES MAXILLARY	
	3 BRANCHES MANDIBULAR	
PROMPTS	PROMPT FOR BOUNDARIES OF DIVISIONS	
SECOND QUESTION (if needed)	DESCRIBE THE COURSE & SENSORY DISTRIBUTION OF THE INFRAORBITAL NERVE	
POINTS REQUIRED	INFRAORBITAL FORAMEN	
	CHEEK, UPPER LIP, LABIAL GUM, BIT OF NOSE	
	MAXILLA/ LOWER EYELID	
PROMPTS		

Ventricles 2016-2-C

Stem: Moving onto Anatomy.			
<p>Question 3</p> <p>CNS Ventricular system</p> <p>Subject: Anat:</p> <p>LOA: 1</p>	<p>1. Describe the ventricular system of the brain.</p> <p>[What connects the third and fourth ventricles?]</p> <p>2. Outline CSF flow in the brain. (if not already covered in 1)</p>	<p>Lateral Ventricles (ant/ post and inf horns) = largest each opens into 3rd via interventricular foramen</p> <p>3rd ventricle = slit like btw diencephalon halves</p> <p>Continues as cerebral aqueduct (post-inf) which connects 3rd and 4th</p> <p>4th ventricle = pyramid shaped, post part of pons and medulla. Tapers, continuous central canal</p> <p>CSF secreted by choroid plexuses in ventricles</p> <p>Drains into subarachnoid space from 4th via median (1) and lateral (2) apertures. It then passes to the subarachnoid space – multiple cisterns</p>	<p>Can use same CT scan</p> <p>Must get 4 ventricles and cerebral aqueduct to pass PLUS some additional information (i.e. location in brain, size/shape)</p> <p>2 Bold</p>