OSCE - Anatomy

**Base of skull**
What are the structures passing through cribriform plate, optic canal and supra orbital fissure? Where is the optic canal?

**Eye**
Describe anatomy of the bony orbit (roof, floor, medial and lateral wall).
Describe the course of optic nerve and what is the relationship of optic nerve to carotid artery? Which fibres of optic nerve decussate? If there is bitemporal hemianopia, where is the lesion? What is the most common cause? What is the length of the intraorbital section of optic nerve? Where do majority of the fibres from optic nerve terminate? Describe the nerve supply of the extraocular muscles. Explain the sensory innervation of the conjuctiva.

Describe the technique of peribulbar block with atleast three complications

Explain the technique of retrobulbar block. What are the bony landmarks? What will be the direction of the needle? What kind of needle is used to do retrobulbar block? What should be the length?

**Trigeminal nerve**
Describe origin and course of the 5th cranial nerve. Where is the 5th cranial nerve ganglion? Name some disease that can affect 5th cranial nerve. Describe intracranial course of the trigeminal nerve Describe the pathway for the ophthalmic branch of trigeminal nerve and its terminal branches. Discuss trigeminal neuralgia

**Vagus nerve**
Describe the origin and course of the 10th cranial nerve
Describe the course of the vagus nerve, from the head to the abdomen

**Vertebral column and Spinal cord:**
You are asked about the anatomy of the vertebral column. You are shown a model of the vertebral column. Identify the pedicles, lamina, facet joints, foramina, ligament denticulatum. How do the atlas and axis articulate? Describe the features of the atlas and axis vertebrae.

Describe the ligamentous relationships of the spine. Discuss the relations of the epidural space. Describe the margins of the epidural space and the upper and lower limits of the cord. What volume of epidural anaesthetic blocks one vertebral segment at different levels?

Discuss the anatomy of the sacrum/sacral canal/sacral hiatus. Where is the sacrococcygeal membrane? Where does the dura end? Demonstrate how you would carry out a caudal block in a 5-year old child. What would your specific discharge criteria be?

Discuss an X-ray of the cervical spine.

You are shown a diagram of the spinal cord cross section. What constitutes the gray matter? What would you see if you were examining gray matter under a microscope? Identify all the
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ascending and descending tracts tracing their course and describe the sensory modalities conducted by these different pathways. What are the consequences of hemisection of the spinal cord?

What s the total volume of the cerebrospinal fluid (CSF)? How much of it is intracranial? What is the pressure of the CSF? What is its specific gravity? What are the contents of CSF?

Describe the blood supply to the spinal cord? Where does it come from and what does it supply? What is anterior spinal artery syndrome? Which tracts/modalities are affected?

You are shown pictures of ganglia and tracts coming out of the spinal cord and asked to name them.

Discuss the anatomy of autonomic nervous system. You will be given a picture of pons/medulla & a picture of parasympathetic and sympathetic out flow. Identify the nuclei and nerves, neurotransmitters, ganglions.

Facial bones:
Discuss Le Forte fractures and their consequences. What happens in Le Forte 3 fracture and what are the signs?

Larynx
Describe anatomy of the larynx. You will be shown a line diagram to identify structures – nerves and muscles. What are the elevators and depressors of the larynx? What are the structures supplied by superior laryngeal nerve?

Trachea
Describe the anatomy of trachea. Demonstrate on actor where the cricoid, hyoid and thyroid are? Where would you perform elective and mini tracheostomy? What are the complications?

Neck
Describe anatomy of the neck (discuss the anatomical triangles, boundaries and contents of each of them).

Cricoid cartilage
Anatomy, cricoid pressure and how to perform cricothyroidotomy

Ribs
Describe anatomy of the ribs including neurovascular bundle. Describe the technique of intercostal nerve block. What are the indications? What complications can occur with intercostal block?

Identify the given rib as right/left sided? Is it an upper or lower rib? - What are the surfaces? What structures pass under it? In what order do these structures occur? You are shown a first rib: identify the structures passing over it and muscles attaching to it.
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Describe the anatomy of subclavian vein including its origin, drainage and its relations. Demonstrate how you would do a subclavian venous cvc on sinman. Describe the benefits and complications associated with this procedure.

Discuss thoracic surface anatomy in relation to chest drain. Explain how you would identify tension pneumothorax and discuss the immediate management. What will you after needle thoracentesis? Where will you do an emergency chest drain? Can you demonstrate the technique step by step? Where will you do the elective chest drain?

Heart
Discuss the pacemaker activity in the heart
What are the layers of the heart?
Where are the sinoatrial and atrioventricular nodes?
What are the Sinuses of valsalva and what is their function/physiological importance?
How many cusps are there in the aortic/mitral/tricuspid valves?
What are the chordae tendinae, and what is their function?
What happens if the chordae rupture?
What is the usual ratio of depth of RV: LV?
What are the normal RV pressures?
What is the normal left atrial pressure (LAP)?
What are the pressures in the heart chambers?
Describe the nerve supply of the AV node.

Blood supply of the heart
Name the branches of the coronary arteries and what do they supply?
From which aortic sinus does the coronary artery arise?
Which is the dominant artery?
Describe the blood supply to the sinoatrial node and atrioventricular node including anatomical variation in %
What is the significance of right coronary artery occlusion? What do these patients need?

Venous drainage of the heart
Describe the venous drainage of the heart

Coronary angiogram
What pathological process is demonstrated at the labelled points, and which artery is affected?
Identify the main stem of the left coronary artery in the given angiogram
You are presented with a coronary angiogram showing the left coronary artery. Identify the branch marked "A" (left anterior descending artery). What does it supply?

Lung:
Describe the anatomy of the lung (trachea to alveoli including lung lobes, blood supply, and nerve supply, what lobes are likely to be affected with aspiration in different positions)

Diaphragm:
Anatomy- picture of diaphragm and structures piercing the diaphragm
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Describe the structure of the diaphragm including its origin and attachment? Identify the structures. At what level does IVC, oesophagus and aorta pierce diaphragm? Describe the motor and sensory supply of diaphragm.

Coeliac plexus
Describe anatomy of the coeliac plexus. What are the indications for coeliac plexus block? Describe the technique and complications associated with the technique?

Interscalene approach to brachial plexus
Using an actor to demonstrate how you would carry out an interscalene block. Describe the block: needle size, depth, amount of local anaesthetic (LA), type of LA, strength of LA. What are the risks associated with interscalene block? Which dermatomes are you more likely to miss with this approach?

Supraclavicular approach to brachial plexus
Using an actor to demonstrate how you would carry out a supraclavicular nerve block. Describe the block: needle size, depth, amount of local anaesthetic (LA), type of LA, strength of LA. What are the risks associated with supraclavicular block? Which dermatomes are you more likely to miss with this approach?

Axillary block
Describe how you would perform an axillary block. What are the landmarks? What are the nerves you are aiming to block? What are the problems associated with this block? If not mentioned, ask about what nerve is likely to be missed? What is the aim of doing an subcutaneous infiltration at the level of the block?

Arm and forearm
You are shown a diagram of the brachial plexus, with numbered points. You are then shown pictures of patients in various positions. Indicate which points could be injured. Which nerve is damaged by the blood pressure cuff? Describe how you would test the sensory and motor function of the radial nerve.

You are shown a picture of an arm hanging off the side of an operating table. Which nerve is more likely to be at risk? Describe how you would test the sensory and motor function of the ulnar nerve. What treatment would you give for ulnar nerve palsy?

Identify on model biceps tendon, brachial artery and radial nerve. Describe the course of brachial artery in the antecubital fossa. What is the name of aponeurosis in antecubital fossa? Which vein would you choose for a long line on antecubital fossa and why? Where might a line stick and how would you negotiate?

Wrist
Identify positions of radial nerve, ulnar nerve, median nerve and tendons at the level of flexor retinaculum. What muscles does ulnar nerve supply in the hand? Describe how you would block the median nerve at the wrist. Describe how you would block the ulnar nerve at the wrist.
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**Neuromuscular monitoring**
Demonstrate correct placement of the electrodes for neuromuscular blockade monitoring. Describe the anatomy of ulnar nerve. Explain the different stimulation methods. Demonstrate where on arm you would place electrodes, talk through TOF, DBS, tetanic stimulation and post tetanic count including underlying current settings. What are the differences between depolarisation and non-depolarising block on neuromuscular monitoring?

What test would you perform to ascertain the integrity of superficial and deep palmar arches? Demonstrate how you would perform a modified Allen’s test.

**Ilioinguinal block**
How would you block the ilioinguinal and iliohypogastric nerve? What are their root values? How would you go about blocking the ilioinguinal nerve? What other nerve may be blocked accidentally when you do this? Between which two muscles are you infiltrating in this block?

**Lumbar plexus block**
Describe the anatomy and technique how you would perform a lumbar plexus block.

**Femoral nerve block**
How do you locate the femoral artery on an actor? Where do the nerve and vein lie in relation to this? What is the nerve supply for adductors? What are the nerve roots of the femoral nerve and obturator nerve? Describe how you would test the dermatomes of the lower limb.

**Three in one block.**
You are asked to demonstrate how to perform a 3-1 block. Answer the following questions: Discuss the distribution of spinal nerves and dermatomes. Where is the nerve root of the femoral nerve and the obturator nerve? Describe the nerve supply of the adductor muscles. Which nerves are blocked in a three-in-one block? What do these nerves supply (motor and sensory)?

**Sciatic nerve block**
Describe the origin and course of sciatic nerve. What are the different approaches to sciatic nerve block? Explain the approach that you use in your clinical practice?

**Ankle block**
Name the nerves supplying the foot. Discuss the cutaneous innervation of the saphenous, sural, tibial, deep and superficial peroneal nerves. Describe the course of the saphenous nerve; where does it become superficial? Describe the distribution of the medial plantar nerve. Demonstrate this technique on an actor. What volumes would you use? What are the safe doses of prilocaine, bupivicaine and lidocaine?