



*FIRST NATIONAL e-QUIZ COMPETITION*  
on  
**CLINICAL ANATOMY**



## QUESTIONS

### [SECTION 1]

- [Q.] A 45 year old plumber presented in the clinic complaining of longstanding pain in the elbow. Subsequent examination revealed normal flexion/ extension at both the elbow and the wrist, but weakened abduction of the thumb and extension at the metacarpophalangeal joints of the fingers. Those symptoms were found to be caused by a nerve entrapment. Which of the following muscles could cause this entrapment ?

  - Supinator
  - Extensor digitorum
  - Anconeus
  - Extensor indices
  - Extensor carpi ulnaris
- [Q.] A 3-year-old child suspected of aspirating a small, cloth-covered metal button is seen in the emergency room. Although the child does not complain of pain, there is frequent coughing. Diminished breath sounds are most likely to be heard in which of the following ?

  - In the left superior lobe
  - In both lungs
  - In the right inferior lobe
  - In the right superior lobe
  - In the lingula of the left inferior lobe
- [Q.] Mr. Brown, a 78 year old retired teacher was brought to the clinic by his wife who complained that her husband kept bumping into things on his right. She added that Mr. Brown had developed a tendency to drift towards the left while walking and not noticing people or objects on his right. On clinical examination, it was found that Mr. Brown could not see anything in the right visual field of both the eyes. An MRI of the head was ordered suspecting which of the following ?

  - An aneurysm in the arterial supply to the visual cortex
  - An aneurysm in the left middle cerebral artery
  - A tumor in the right middle cranial fossa
  - A pituitary tumor
  - A tumor in the medial wall of the right orbit

4. [Q.] A patient experienced a prolonged stay in one position during a recent surgery and postoperative recovery that resulted in compression of the common fibular (peroneal) nerve against the fibular head. Which of the following motor deficits would be most likely to occur ?
- Loss of flexion at the knee
  - Loss of medial rotation of the tibia
  - Loss of extension at the knee
  - Loss of plantar flexion
  - Loss of eversion
5. [Q.] A 23 year old male was brought to the trauma unit after being involved in a road-traffic accident. He presented with headache, bloody otorrhea (right ear) and vomiting. On the second day in the hospital, he showed right sided conductive hearing loss. He was discharged with a scheduled follow-up. However, he returned to the hospital 6 days later with marked weakness on the right side of the face. He also complained that his meals were tasteless. Which of the following is true regarding his injury sustained in the accident ?
- Injury to the Facial nerve distal to the origin of the Chorda tympani
  - Fracture of the temporal bone
  - Injury to Chorda tympani proximal to Petrotympenic fissure
  - Injury to the tympanic cavity
  - Injury to Facial nerve near the Stylomastoid foramen
6. A 23-year-old woman with a natural menstrual cycle is nearing ovulation. The oocyte of a mature follicle will be induced to undergo the first meiotic division as a result of which of the following hormonal stimuli ?
- The low estrogen titers associated with the maturing follicle
  - The slow elevation of progesterone produced by luteal cells
  - The gradual elevation of follicle-stimulating hormone (FSH) titers
  - The cessation of progesterone secretion
  - The surge of luteinizing hormone (LH) initiated by high estrogen titers
7. A 46 year old moderately overweight lady was brought to the hospital with severe abdominal pain, nausea and vomiting. The pain, which was sharp and constant, began in the epigastric region and radiated bilaterally around the chest to just below the scapulae. Subsequently, the pain became localized in the right hypochondrium. Numerous calcified stones in the region of the gallbladder were visible on x-ray. The patient shows no sign of jaundice (icterus). Diffuse pain referred to the epigastric region and radiating circumferentially around the chest is the result of afferent fibers that travel via which of the following nerves?
- Greater splanchnic
  - Vagus
  - Pelvic splanchnics
  - Intercostal

e. Phrenic

8. While watching a popular movie, Mr. Smith complained that he could not understand anything as the actors were speaking in some foreign language. However, once his wife turned on the subtitles for the movie in the same language, he could understand the dialogues normally. After watching the movie, Mr. Smith had no problem in repeating the interesting dialogues from the movie while discussing about it with his wife. Mr. Smith probably has a lesion in which area of his cerebral cortex ?

- a. Area 17
- b. Areas 18, 19
- c. Area 22
- d. Areas 39, 40
- e. Areas 44, 45

9. A 36-year-old male office worker comes to the clinic complaining of general weakness and shortness of breath. He also relates a rapid, throbbing pulse after climbing a flight of stairs. Cardiac auscultation reveals a diastolic rumbling murmur attributable to the mitral valve. What would be the best site to auscultate the mitral valve ?

- a. Right side adjacent to the sternum in the fourth intercostal space
- b. Left side adjacent to the sternum in the second intercostal space
- c. Right side adjacent to the sternum in the second intercostal space
- d. Left side in the midclavicular line in the fifth intercostal space
- e. Left side adjacent to the sternum in the fifth intercostal space

10. A teenage cricketer was hit in the base of the skull by a loose bat. He had hoarseness of voice and complained of difficulty in swallowing. An X-ray was advised and it was found that he had sustained a fracture at the base of the skull which passed through the jugular foramen. On examination, the cricketer had a large hematoma behind the ear on the injured side. Considering the site of the injury, which of the following muscles would remain functional ?

- a. Stylopharyngeus
- b. Trapezius
- c. Styloglossus
- d. Palatoglossus
- e. Sternocleidomastoid

## [SECTION 2]

11. A 45 year old alcoholic male named Eric was brought to the neurology clinic. Eric suffered from the paralysis of the right half of his body. He complained of having double vision and on general examination, it was observed that he had a medial squint of his left eye. It was also observed that Eric was unable to tightly close his left eyelids and saliva drooled from the left angle of his mouth. On being asked to fill his mouth with air, he was unable to inflate his left cheek. Eric was probably suffering from a lesion of which of the following ?
- Pons
  - Internal capsule
  - Thalamus
  - Medulla oblongata
  - Mid brain
12. 82 year old Mr. Jones recovered from a stroke which occurred six months ago. However, he suddenly started complaining of numbness of the left side of his body. Soon afterwards, Mr. Jones started feeling burning and tingling sensations in the left hand and foot. His son brought him to the hospital because now Mr. Jones had started complaining of severe pain when he was just touched lightly on his left hand. Sometimes the severe pain occurred even without Mr. Jones being touched. Which of the following blood vessels is probably involved with Mr. Jones' condition ?
- Posterior communicating artery
  - Basilar artery
  - Middle cerebral artery
  - Anterior cerebral artery
  - Posterior cerebral artery
13. A 78 year old male was diagnosed with early stage of non-small cell carcinoma of the left lung. Resection of the affected segment of the lung was advised. The cardiothoracic surgeon must be familiar with bronchopulmonary segments since individual segments of the lung can be removed, leaving the rest of the lung intact and functional. Which of the following is a correct characterization of bronchopulmonary segments ?
- The arterial supply is located in the periphery of each segment
  - Each segment is supplied by a secondary or lobar bronchus
  - They are separated by parietal pleura
  - Veins may be used to localize the planes between segments
  - They are arranged with their bases directed toward the hilum of the lung
14. A 19 year old teenager was dancing in her college dance club when she inverted her left foot. She presents to the orthopedic clinic the next day with a swollen foot, but mainly complains about tenderness on the lateral aspect of the foot along the plantar surface. Careful palpation of her foot determines that she has tenderness over the

tuberosity of the fifth metatarsal bone. What muscle has avulsed from its insertion on to the tuberosity of the fifth metatarsal ?

- a. Tibialis posterior
  - b. Tibialis anterior
  - c. Abductor digiti minimi
  - d. Fibularis (Peroneus) brevis
  - e. Fibularis (Peroneus) longus
15. A 53 year old lady complained of perceiving normal sounds as too loud along with the feeling of pain in her right external auditory meatus. On examination, there was loss of blink reflex in the right eye on stimulation of either cornea and difficulty in sensing taste from the anterior two-third of the right side of the tongue. However, lacrimation from the right eye and the jaw-jerk reflex were normal. She did not have any problem in maintaining her balance. She could not tightly close her right eye which was as a result of involvement of which of the following ?
- a. Buccal branch of Trigeminal nerve
  - b. Superior tarsal muscle (of Muller)
  - c. Zygomatic branch of Facial nerve
  - d. Levator palpebrae superioris muscle
  - e. Orbital portion of the Orbicularis oculi muscle
16. The miscarriage rate in humans is estimated to be as high as 15% of all pregnancies. These most often occur very early in pregnancy due to major defects in vital organs. Failure of the sixth aortic arch arteries to form would lead to loss of blood supply to which of the following essential organs ?
- a. Thyroid gland
  - b. Face
  - c. Lungs
  - d. Upper digestive tract
  - e. Right side of the heart
17. A full-term male baby weighing 3.5 kg was delivered vaginally to a 30 year old lady. The baby presented with a large scrotum. On palpation, both the testes were felt inside the scrotum. On gently pressing the abdomen, the scrotum of the baby swelled even more. What would be the probable underlying cause of the baby's condition ?
- a. Defects in the femoral sheath and fascia lata below the inguinal ligament
  - b. Stasis of venous blood around the testes
  - c. Failure of contraction of the gubernaculum
  - d. Defect in the anterior abdominal wall
  - e. Communication between the processus vaginalis and peritoneal cavity
18. A 52 year old man is brought to the emergency room after being found in the park, where apparently, he had lain overnight after a fall. He complains of severe pain in the

left arm. Physical examination suggests a broken humerus that is confirmed radiologically. The patient can extend the forearm at the elbow, but supination appears to be somewhat weak; the hand grasp is very weak compared with the uninjured arm. Neurologic examination reveals an inability to extend the wrist. The observation that extension at the elbow appears normal, but supination of the forearm appears weak, warrants localization of the nerve lesion to which of the following?

- a. Posterior cord of the brachial plexus in the axilla
  - b. Posterior divisions of the brachial plexus
  - c. Radial nerve in the midforearm
  - d. Radial nerve in the vicinity of the head of the radius
  - e. Radial nerve at the distal third of the humerus
19. A 10 year old girl was brought to the Paediatric OPD by her mother as she was suffering from sore throat. The mother had also noticed that the girl had started snoring loudly in her sleep. On examination, it was found that the cause of her symptoms was the enlargement of palatine tonsils. She was referred to the ENT OPD where the ENT surgeon suggested the surgical removal of the enlarged tonsils. Which of the following risks related to the surgery was explained to the mother before obtaining her consent ?
- a. Loss in the ability to taste salt in the anterior two-thirds of the tongue
  - b. Weakness in the ability to open her mouth fully when eating an apple due to damage to the innervation to the lateral pterygoid muscle
  - c. Loss in the ability to protrude her tongue, thus limiting her ability to lick an ice cream cone
  - d. Weakened ability to move her jaw from side to side because of loss in innervation of the medial pterygoid muscle
  - e. Loss in the ability to taste in the posterior one-third of the tongue and perhaps some difficulty in swallowing
20. Jiaming Li, a 11 year old gymnastics trainee was training on the balance beam when she slipped and fell with her perineum striking the beam. She developed a massive subcutaneous hematoma filling her perineum. The hematoma extended about half way up to the umbilicus and posteriorly was limited just anterior to the anus. She could urinate and no blood was found in the urine. The blood did not enter the thighs. Such type of 'straddle injuries' would result in the blood entering which of the following areas ?
- a. Deep perineal space
  - b. Superficial perineal space
  - c. Inguinal canal
  - d. Femoral sheath
  - e. Ischioanal fossa

## [SECTION 3]

21. Mohan, a 23 year old male was admitted to the hospital after sustaining a head injury during a scuffle with some robbers. He suffered a fracture of the parietal bone and was unconscious when brought to the hospital. However, he gained consciousness and described the incident to the police. After a few hours, he started feeling drowsy and fell unconscious again. An urgent CT scan of the head was ordered which showed a lens-shaped (biconvex) hyperdensity adjacent to the parietal bone. Which of the following blood vessels probably caused Mohan's present condition ?
- Middle cerebral artery
  - Middle meningeal artery
  - Internal jugular vein
  - Internal carotid artery
  - Great cerebral vein
22. An 82 year old male was brought to the emergency after sustaining a fall in his bedroom half an hour ago. His daughter who accompanied him told the attending doctor that the old man had complained of not being able to feel anything when he accidentally spilled hot tea on his hand. He then had got up to go and wash his hand when he sustained a fall and could not get up again. On examination, the doctor confirmed the presence of exaggerated tendon reflexes and a positive Babinski's sign. While being examined, the old man brought his daughter's attention to his mobile phone which was vibrating in the pocket of his trousers. What could be the probable cause of the man's present condition ?
- Complete transection of the spinal cord
  - A cerebellar tumor
  - Hemissection of the spinal cord
  - Ischemia of the anterior spinal artery
  - Cerebral stroke
23. A 36 year old man fell while playing soccer 1 week earlier. He fell on his left hand and didn't think he broke anything, but he has a palmar mass and has weakened ability to grasp with that hand and has developed some tingling in his thumb and index finger. He has no pain when you press in the anatomical snuffbox. Which of the following carpal bones is most likely to dislocate anteriorly to cause a form of carpal tunnel syndrome ?
- Hamate
  - Lunate
  - Capitate
  - Navicular
  - Scaphoid
24. A 30 year old male developed sudden, sharp left-sided chest pain and shortness of breath. He was diagnosed as a case of spontaneous pneumothorax. A negative

pressure drain (chest tube) was to be inserted into the pleural space in order to treat the pneumothorax. Effective locations for the drain include which of the following ?

- a. Costomediastinal recess on the left, adjacent to the xiphoid process
  - b. Apex between the clavicle and first rib
  - c. Right sixth intercostal space in the midaxillary line
  - d. Right fourth intercostal space in the midclavicular line (just below the nipple)
  - e. Right eighth intercostal space in the midclavicular line (about 4 in. below the nipple)
25. In a presurgical patient, the great saphenous vein was cannulated in the vicinity of the ankle. During the procedure, the patient experienced severe pain that radiated along the medial border of the foot. Which of the following nerves was accidentally included in a ligature during this procedure ?
- a. Sural cutaneous nerve
  - b. Superficial fibular nerve
  - c. Tibial nerve
  - d. Medial femoral cutaneous nerve
  - e. Saphenous nerve
26. On examining the "corneal reflex" in a patient, the cornea is touched with the wisp of cotton that causes the eyelid of the touched eye to rapidly shut. Thus, as with most reflexes, one tests both the afferent information that is carried back to the central nervous system and the reflex motor response. What specific cranial nerve branches are responsible for both the afferent and efferent parts of the corneal reflex ?
- a. Infraorbital nerve (CN V2); zygomatic branches of the facial nerve (CN VII)
  - b. Short ciliary nerve (CN III); zygomatic and temporal branches of the facial nerve (CN VII)
  - c. Long ciliary nerve (CN V1); zygomatic branches of the facial nerve (CN VII)
  - d. Long ciliary nerve (CN V1); infraorbital branch of the trigeminal nerve (CN V2)
  - e. Short ciliary nerve (CN III); oculomotor nerve (CN III)
27. A full-term baby boy who is otherwise normal, has a left cleft of the upper lip that extends upward toward the left nostril and left anterior cleft of the primary palate just deep to the cleft lip. You explain to the mother that these defects are most likely due to a failure of which of the following ?
- a. Mandibular process to fuse with the lateral nasal process
  - b. Mandibular process to fuse with the medial nasal process
  - c. Maxillary process to fuse with the medial nasal process
  - d. Maxillary process to fuse with the lateral nasal process
  - e. Lateral and medial nasal processes to fuse with each other
28. A 23 year old male was brought to the emergency unit with severe pain in abdomen. The pain initiated around the umbilicus but then shifted to the right lower abdomen. The patient was nauseated and also had fever. He was lying on his left side with the



right thigh flexed. He cried out in pain on an attempt to straighten his leg after turning him to a supine position. However, on palpation of right iliac fossa, there was no tenderness. A provisional diagnosis of acute appendicitis was made. Which of the following would be the most probable cause of the pain on extension of the leg ?

- a. Spasm of Quadratus lumborum
  - b. Spasm of Obturator externus
  - c. Spasm of External abdominal oblique
  - d. Spasm of Obturator internus
  - e. Spasm of Psoas major
29. An ENT surgeon is about to remove a pair of enlarged palatine tonsils from an 11-year-old boy who has suffered with their repeated infection for about 3 years. The palatine tonsils are located between the anterior and posterior palatine (faucial) folds. The nerves that innervate these folds are, respectively, which of the following ?
- a. Trigeminal nerve and glossopharyngeal nerve
  - b. Trigeminal nerve and pharyngeal branch of vagus
  - c. Facial nerve and glossopharyngeal nerve
  - d. Facial nerve and pharyngeal branch of vagus
  - e. Glossopharyngeal nerve and the pharyngeal plexus
30. A firefighter, age 34, who is a nonsmoker, complains of bouts of dizziness at times of intense exertion. His history reveals having been exposed to intense smoke 6 months ago when his breathing apparatus malfunctioned during a job. He is scheduled for a pulmonary function test. During deep inspiration the “pump handle” movement results in which of the following ?
- a. No movement at the costovertebral joints
  - b. An increase in the superior-inferior diameter of the chest
  - c. A primary change in the anterior-posterior diameter of the chest
  - d. A primary change in the transverse diameter of the chest
  - e. A decrease in the anterior-posterior diameter of the chest

## [SECTION 4]

31. Mrs. Stephenson, a 51 year old female, noticed some clumsiness in her daily activities because of which she consulted a doctor. On examination, she demonstrated a delay in initiating voluntary movements and moved her hand haphazardly before bringing it to touch her nose. On being asked to rapidly pronate and supinate her hand and forearm repeatedly, she could only manage it unevenly. However, she did not show any tremors and her eye movements were normal. She also had no problem in maintaining her balance while walking. Which of the following regions most likely contains the lesion causing her problems ?
- Hemispheres of the posterior cerebellar lobe
  - Ventral spinocerebellar tract
  - Vermal region of the anterior cerebellar lobe
  - Flocculonodular lobe of the cerebellum
  - Fastigial nucleus
32. A 27 year old male underwent a surgery to treat his severe epilepsy. After surgery, the patient complained of some issues with his visual and tactile perceptions. When he was shown an object in the right visual field, he could correctly name the object. Whereas on showing the object in the left visual field, he responded that nothing was visible, but he could still identify the object by pointing it out from a group of many different objects by using his left hand. Which part of his nervous system probably sustained an injury during the surgery done for his epilepsy ?
- Internal capsule
  - Optic tract
  - Primary sensory cortex
  - Visual cortex
  - Corpus callosum
33. An 8 year old boy returns to the Pediatric clinic because he has pain in the gluteal region and he walks with a limp. He had just been at the clinic a couple of days ago for a normal check up and an update on his vaccinations. The boy said that the pain all started when the nurse gave him his booster shot in his left buttock. On observing him walk, it is noticed that he drops his right hip as he places all the weight on his left leg and swings his right leg forward. Hip and knee extension are normal during examination. Both legs flex normally with equal strength, but there is some falsity of his muscles just under the iliac crest on the left side only. The booster shot he got a couple of days ago likely damaged which of the following ?
- Inferior gluteal nerve partially paralyzing his gluteus medius muscle
  - Lateral cutaneous nerve of the thigh giving him his pain
  - Sciatic nerve partially paralyzing his hamstring muscles
  - Superior gluteal nerve partially paralyzing his gluteus medius muscle
  - Superior gluteal nerve partially paralyzing his gluteus maximus muscle

34. A major surgery is being carried out under anaesthesia using muscle relaxants. It becomes necessary by the anaesthesiologist to perform laryngeal intubation during the surgery due to the relaxation of the laryngeal muscles. Laryngeal intubation serves as the substitute for which of the following laryngeal muscles ?
- Lateral cricoarytenoid muscles
  - Thyroarytenoid muscle
  - Cricothyroid muscle
  - Transverse arytenoid muscles
  - Posterior cricoarytenoid muscles
35. During a prenatal ultrasound, images suggest that the fetus has a defective spinal cord. Alpha-fetoprotein (AFP) levels are two standard deviations above normal. The mother elects to deliver the child via a C-section so as to reduce the chances of damaging any protruding spinal cord and meninges. After birth, ultrasound is used to determine that the covering of the spinal cord, along with the intact spinal cord, forms a saclike projection through a dorsal defect in the vertebral column. What would this condition be called ?
- Rachischisis
  - Meningocele
  - Hydrocephaly
  - Anencephaly
  - Meningomyelocele
36. A 56 year old male alcoholic was involved in a brawl with some criminals at a bar. He received a superficial knife wound to his lower abdomen which was treated in the emergency unit of the local hospital. Subsequently, this man developed a direct inguinal hernia. Which of the following nerves is most likely to be the cause of the weakened anterior abdominal wall ?
- Genitofemoral nerve
  - The tenth intercostal nerve
  - Subcostal nerve
  - Pelvic splanchnic nerves
  - Ilioinguinal nerve
37. A 16 year old girl is brought into the orthopedic clinic because she fell off her bicycle while riding down a steep hill. On examination of her left arm, a displaced midshaft break of her humerus can be palpated. She cannot extend her wrist, but no distal broken bones are felt. She has limited ability to extend and abduct her arm at the shoulder. Her left forearm and hand feel slightly colder than her right arm and she seems to have lost some sensation on the posterior lateral portion of her left hand, though she says she can feel with all her fingertips. She has probably damaged which of the following ?
- Axillary nerve
  - Median nerve and brachial artery

- c. Radial nerve
- d. Axillary nerve and posterior humeral circumflex artery
- e. Radial nerve and deep artery of the arm

38. An elderly woman visits the hospital emergency room with the recent onset of grotesque swelling of the right arm, neck, and face. Her right jugular vein is visibly engorged and her right brachial pulse is diminished. On the basis of these signs, her chest x-rays might show which of the following ?

- a. Thoracic duct blockage in the posterior mediastinum
- b. Right pneumothorax
- c. Aneurysm of the aortic arch
- d. A mass in the upper lobe of the right lung
- e. A left cervical rib

39. A 55 year old man was brought into the hospital with a severe burn on his left hand. The man had placed his hand on the hot burner of an electric stove, but had not sensed anything wrong until he smelled burning flesh. Neurologic examination revealed loss of pain and temperature sensation over dermatomes C4 through T6 bilaterally. However, pain and temperature were perceived bilaterally both above C4 and below T6. Discriminative touch was present in unburned dermatomes on the left and in the right extremity. Muscle strength and reflexes were otherwise normal. Which of the following tracts of the spinal cord is affected in this case ?

- a. Fasciculus gracilis
- b. Intermediolateral cell column
- c. Cuneate fasciculus
- d. Dorsal columns
- e. Lateral spinothalamic tract

40. Mr. Raj, a 30 year old male, was admitted to the hospital after suffering an injury while travelling in a train. He described that his right knee struck the opposite seat when the high-speed train suddenly stopped. On examination, his right lower limb was in a position of flexion, adduction and internal rotation. Which of the following would be true regarding Mr. Raj's injury ?

- a. Injury to the femoral nerve
- b. Avulsion of the acetabular margin
- c. Rupture of the Ligamentum patellae
- d. Rupture of the Profunda femoris artery
- e. Rupture of the anterior cruciate ligament

## [SECTION 5]

41. A 63 year old woman was brought into the emergency room by her son, who suspected she had suffered a stroke the previous night. Subsequent examination revealed spastic hemiplegia on the left side with hyperreflexia and a positive Babinski's sign. The left side of the patient's face was paralyzed below the eye, and the right eye was turned out and down. The right pupil made direct and consensual responses to light, but the left pupil was fixed and unresponsive. There were no apparent sensory deficits. Which is the most likely location of the lesion ?
- Left thalamus
  - Left motor cortex
  - Right sensory cortex
  - Right thalamus
  - Right midbrain
42. A patient is observed to suffer from hypoglossal hemiplegia. There is atrophy of the tongue on the right side and deviation of the protruded tongue to the right. In addition, the patient exhibits upper motor neuron paralysis of the left side of the body. Deviation of the tongue toward the right involves which of the following ?
- Left nucleus ambiguus
  - Right pyramidal tract rostral to the decussation
  - Right hypoglossal nerve
  - Left pyramidal tract caudal to the decussation
  - Right nucleus ambiguus
43. A 19-year-old man is involved in a street fight in which he is viciously attacked with a lead pipe. A particularly forceful blow hits his left elbow. Blunt trauma to the elbow may lead to the development of which of the following ?
- Weakness of the abductor pollicis brevis
  - Wristdrop
  - Ulnar deviation of the hand
  - Clawhand or benediction sign
  - Poor pronation of the forearm
44. Mr. Wilson, a 48 year old manager, was admitted to the cardiology unit after being diagnosed with an episode of myocardial infarction. If an echocardiogram suggests reduced posterior ventricular wall movement, there will be reduced blood flow within which of the following coronary arteries and veins ?
- Anterior interventricular artery; great cardiac vein
  - Posterior interventricular artery; middle cardiac vein
  - Posterior interventricular artery; small cardiac vein
  - Anterior interventricular artery; middle cardiac vein
  - Circumflex branch of the left artery; great cardiac vein

45. Johnson, a sprint athlete was competing in a 100 metre race. At the start of the race when he took-off, Johnson suddenly felt a snap, stumbled and fell on the track. He was unable to even walk after the fall and could feel a lump in his right calf while he was being carried away to the medical facility. Which of the following would be true regarding Johnson's injury ?
- Ankle sprain
  - Medial meniscal injury
  - Hamstring injury
  - Shin splint
  - Tendoachilles rupture
46. A 20 year old male undergoes a choking incident in a restaurant. The Heimlich manoeuvre is unsuccessful at removing the food from the pharynx. The victim is having extreme difficulty breathing and starts to pass out. Where would be the best site to produce an emergency airway ?
- In the midline just superior to the hyoid bone
  - At the laryngeal notch
  - In the midline just inferior to the hyoid bone
  - At tracheal ring 2 to 3 below the cricoid cartilage
  - At the junction between the thyroid cartilage and cricoid cartilage
47. A 24 year old male medical student has a reddish spot that is in the center of a slightly raised area just anterior to his sternocleidomastoid muscle about one and a half inches superior to his jugular notch. He has had this reddish raised area for as long as he can remember. If pushed on it, it feels attached to something that extends superiorly from this location. At times it leaks a little clear fluid after he has been heavily exercising for long periods of time. What is the probable diagnosis of this congenital anomaly ?
- Thyroglossal duct cyst
  - A branchial fistula
  - A hyperactive sebaceous gland
  - Glossopharyngeal fistula
  - An internal branchial sinus
48. You are looking at series of axial CTs of one of your patients. Which of the following is the description of structures typically found at the same level as the sternal angle in an axial CT ?
- Junction of the arch of the aorta with right brachiocephalic artery, left common carotid and left subclavian artery
  - Second rib, intervertebral disc T 4/5, bifurcation of right and left pulmonary arteries, top of the arch of the aorta
  - Junction of right and left pulmonary arteries with pulmonary trunk
  - Third rib, intervertebral disc T3/4, bifurcation of the trachea, hemiazygos vein draining into superior vena cava

- e. Second rib, intervertebral disc T 4/5, bifurcation of trachea, azygos veins joining superior vena cava
49. A 21 year old man had some problem in one shoulder. He could not perform overhead abduction of his upper limb from when it is on the side of the body. However, he tilts his torso to the right so that he can abduct the limb overhead. He is having a problem with which of the following muscles ?
- a. Right Supraspinatus
  - b. Right Trapezius
  - c. Right Deltoid
  - d. Left Supraspinatus
  - e. Left Deltoid
50. Pathology within some abdominal organs can occasionally cause referred pain in the shoulder and neck regions, C3–C5, because the diaphragm receives its motor and afferent innervation from this level as a result of its cranial embryonic development. Which of the following abdominal organs sometimes causes unilateral shoulder/neck pain ?
- a. Gallbladder; right side
  - b. Liver; left side
  - c. Spleen; right side
  - d. Appendix; left side
  - e. Pancreas; right side

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