

CHOOSE THE SINGLE BEST ANSWER FOR QUESTION 1 - 80.

1. Damage to the medial cord of the brachial plexus would affect all of the following groups of muscles EXCEPT:
 - A. Flexors of the digits
 - B. Flexors of the forearm
 - C. Pronators of the forearm
 - D. Flexors of the wrist
 - E. Flexors of the thumb

2. A patient undergoes a radical mastectomy in which the breast, pectoralis major and minor muscles, and the entire lymphatic and fascial contents of the axilla are removed. Which of the following structures should be preserved?
 - A. Lateral and medial pectoral nerves
 - B. Thoracodorsal and long thoracic nerves
 - C. Pectoral branches of the thoracoacromial artery
 - D. Clavipectoral fascia
 - E. None of the above

3. Each statement regarding the pia mater is CORRECT EXCEPT:
 - A. It is the most intimate meningeal investment of the spinal cord
 - B. It continues below the conus medullaris as the filum terminale
 - C. At sacral vertebra 2, the filum terminale pierces the arachnoid and continues caudally to the coccyx, invested by dura as the coccygeal ligament
 - D. A projection of pia mater between dorsal and ventral roots forms the denticulate ligament
 - E. Each denticulate ligament is attached in a continuous manner to the entire length of the dura mater

4. Which one of the following relationships in the forearm is CORRECT:
- A. The radial artery courses medial to the flexor carpi radialis
 - B. The ulnar nerve courses deep to the extensor carpi ulnaris
 - C. The median nerve lies between the flexor digitorum profundus and the abductor pollicis longus
 - D. The superficial radial nerve courses superficial to the brachioradialis muscle
 - E. The deep radial nerve courses between the superficial and deep parts of the supinator muscle
5. All of the following statements concerning the brachial plexus are true EXCEPT:
- A. The lateral cord of the brachial plexus contains fibers of ventral rami C5, C6 and C7.
 - B. Fibers of ventral rami C8 and T1 are carried in the lower trunk, medial cord and posterior cord of the brachial plexus
 - C. The suprascapular nerve is a branch of the middle trunk of the brachial plexus
 - D. A penetrating injury one inch above the middle third of the clavicle could damage the trunks of the brachial plexus
 - E. The medial cord carries fibers which innervate muscles that adduct the digits
6. Choose the INCORRECT statement regarding the mammary gland:
- A. The mammary gland is a modified sweat gland
 - B. Deep to the breast there is an area of loose connective tissue named the retromammary space
 - C. The lobes of the breast are enclosed by fascia of the pectoralis major muscle
 - D. The pigmented part of the breast is called the areola
 - E. The nipples contain circular smooth muscle fibers

7. Choose the INCORRECT statement concerning the components of the synovial joints:
- A. The synovial membrane does not cover the articular surfaces of a synovial joint
 - B. Articular cartilage often degenerates with aging or injury
 - C. The fibrous joint capsule is anchored to articular cartilage
 - D. The nerves which innervate the muscles acting upon a joint will also innervate the joint
 - E. Synovial fluid not only lubricates articular surfaces but nourishes the articular cartilage
8. Choose the INCORRECT statement concerning the anterior compartment of the arm:
- A. In the proximal arm, the median nerve is located medial to the brachial artery
 - B. The musculocutaneous nerve is located between the biceps brachii and brachialis muscles
 - C. The coracobrachialis muscle aids in flexion of the upper limb
 - D. The deep fascia of the arm forms the medial and lateral intermuscular septa
 - E. The ulnar nerve does not innervate any muscles in the anterior compartment of the arm
9. Which of the following statements about the axillary artery or its major branches is INCORRECT:
- A. The thoracoacromial trunk supplies blood to the deltoid muscle
 - B. The second part of the axillary artery lies posterior to the pectoralis minor muscle
 - C. The lateral thoracic artery supplies blood to the breast
 - D. The thoracodorsal artery is the major blood supply to the latissimus dorsi muscle
 - E. The posterior circumflex humeral artery passes through the triangular space

10. Each of the statements concerning the arteries of the hand is CORRECT EXCEPT:
- A. The ulnar artery forms the superficial palmar arch
 - B. The common digital arteries from the superficial palmar arch join palmar metacarpal arteries from the deep palmar arch to form proper digital arteries
 - C. The radial artery divides into the princeps pollicis artery and deep palmar arch
 - D. There are normally no anastomoses between the superficial and deep palmar arches
 - E. The deep palmar arch accompanies the deep ulnar nerve
11. In a patient with carpal tunnel syndrome (decreased size of the carpal tunnel), which of the following symptoms would most likely appear?
- A. Loss of adduction of the thumb
 - B. Flattening of the thenar eminence
 - C. Loss of flexion of the little finger (5th digit)
 - D. Dryness and loss of sensation in the skin of the medial palm
 - E. Loss in adduction of the fingers
12. All of the following statements regarding the erector spinae muscle are CORRECT EXCEPT:
- A. The muscle extends from the sacrum to the base of the skull
 - B. The muscle is arranged in three vertical columns: spinalis; iliocostalis and longissimus
 - C. The longissimus is the most laterally located of the three columns
 - D. The muscle is innervated by the dorsal rami of spinal nerves
 - E. Acting bilaterally, all three columns extend the head and part or all of the vertebral column

13. Choose the INCORRECT statement concerning the autonomic nervous system
- A. Splanchnic nerves carry only preganglionic (sympathetic) fibers
 - B. There are no white communicating rami (rami communicantes) in the cervical (neck) region
 - C. White communicating rami carry preganglionic (sympathetic) fibers
 - D. The autonomic innervation of blood vessels and sweat glands in the upper limb is via preganglionic sympathetic fibers
 - E. The sympathetic chain ganglia (paravertebral) contain the nerve cell bodies of the post-ganglionic fibers
14. A tumor that compresses the contents of the left jugular foramen could result in all of the following deficits EXCEPT:
- A. Decreased taste sensation of the left posterior third of the tongue
 - B. Hoarseness of the voice
 - C. Deviation of the protruded tongue to the right
 - D. Drooping of the left shoulder
 - E. Diminished blood flow in the left internal jugular vein
15. Each of the following matches of skin and sensory nerve is CORRECT EXCEPT:
- A. Skin of lower eyelid -- maxillary division of V
 - B. Skin over angle of mandible -- great auricular nerve
 - C. Skin over mastoid process -- greater occipital nerve
 - D. Skin of forehead -- ophthalmic division of V
 - E. Skin covering thyroid cartilage -- transverse nerve of the neck

16. Each of the following relations in the neck is CORRECT EXCEPT:
- A. The phrenic nerve courses on the anterior surface of the anterior scalene muscle and is enclosed by the prevertebral fascia
 - B. The cutaneous branches of the cervical plexus emerge near the middle of the posterior border of the sternomastoid muscle
 - C. In the root of the neck the subclavian vein courses posterior to the anterior scalene muscle
 - D. The cervical pleura (cupula) extends into the root of the neck above the level of the medial third of the clavicle
 - E. The apex of each lobe of the thyroid gland is covered by the sternothyroid muscle
17. Choose the INCORRECT pairing concerning the skull:
- A. Foramen spinosum - middle menigeal artery
 - B. Pterygomaxillary fissure - maxillary artery
 - C. Jugular foramen - glossopharyngeal nerve
 - D. Petrotympenic fissure - facial nerve
 - E. Sphenopalatine foramen - nasopalatine nerve
18. Choose the INCORRECT statement concerning the larynx:
- A. The external laryngeal nerve supplies the only abductor of the vocal folds
 - B. The internal laryngeal nerve supplies sensory innervation to the mucosa over the vestibular (ventricular) folds
 - C. The rima vestibuli is closed by contraction of the aryepiglottic and oblique arytenoid muscles
 - D. The conus elasticus and its mucosa bound the infraglottic cavity
 - E. A bilateral injury to the recurrent laryngeal nerves at the level of the thyroid gland would paralyze all of the intrinsic laryngeal muscles except its cricothyroid muscles

19. Choose the INCORRECT statement concerning the orbit and its contents:
- A. The ciliary ganglion is the source of the postganglionic parasympathetic fibers for the lacrimal gland
 - B. The levator palpebrae superioris muscle is innervated by the oculomotor nerve
 - C. The nasociliary nerve is the main sensory nerve of the eye
 - D. The inferior ophthalmic vein communicates with the pterygoid plexus of veins
 - E. All extraocular eye muscles originate from the common tendinous ring with the exception of the superior and inferior oblique muscles
20. Choose the INCORRECT statement concerning the autonomics of the head and neck:
- A. The deep petrosal, greater petrosal, and lesser petrosal nerves all carry preganglionic parasympathetic fibers
 - B. Postganglionic parasympathetic fibers for the sublingual gland originate in the submandibular ganglion
 - C. Postganglionic parasympathetic fibers for the parotid gland originate in the otic ganglion and are carried by the auriculotemporal nerve
 - D. Injury to the chorda tympani branch of the facial nerve disrupts taste sensation from the anterior two-thirds of the tongue and salivary secretions of the submandibular gland
 - E. All postganglionic sympathetic fibers for the head originate in the superior cervical ganglion.
21. Choose the INCORRECT pairing concerning the nose:
- A. Sphenoethmoidal recess - posterior ethmoidal air cells
 - B. Hiatus semilunaris - maxillary sinus
 - C. Hiatus semilunaris - frontal sinus
 - D. Ethmoidal bulla - middle ethmoidal air cell(s)
 - E. Inferior nasal meatus - nasolacrimal duct

22. Choose the INCORRECT muscle -- function relationship:
- A. Cricothyroid--relaxes the vocal folds
 - B. Lateral cricoarytenoid--adducts the vocal folds
 - C. Posterior cricoarytenoid--abducts the vocal folds
 - D. Vocalis--minute adjustments to change voice pitch
 - E. Aryepiglottic--helps close the laryngeal inlet
23. Choose the INCORRECT function--nerve relationship:
- A. Motor to pharyngeal constrictors--vagus
 - B. Sensory to oropharynx--glossopharyngeal
 - C. Motor to posterior cricoarytenoid--recurrent laryngeal
 - D. Motor to stylopharyngeus--glossopharyngeal
 - E. Motor to cricothyroid--recurrent laryngeal
24. Which nerve innervates the muscle that prevents excessive movement of the stapes at the oval window:
- A. Trigeminal
 - B. Facial
 - C. Glossopharyngeal
 - D. Vestibulocochlear
 - E. Vagus

25. Each of the following statements regarding the lymphatics of the head and neck is CORRECT EXCEPT:
- A. Lymph from the right side of the head and neck drains into the junction of the right subclavian and right internal jugular veins
 - B. The deep cervical lymph nodes are located along the internal jugular vein
 - C. Most of the lymph from the left side of the head and neck drains directly into the left subclavian vein
 - D. Lymph from the tip of the tongue enters the submental lymph nodes
 - E. The jugulo-digastric lymph nodes are located at the posterior belly of the digastric muscle
26. Each of the following pairings is CORRECT EXCEPT:
- A. Opening of maxillary sinus--middle meatus
 - B. Foramen spinosum--middle meningeal artery
 - C. Jugular foramen--cranial nerves IX, X, XI
 - D. Stylomastoid foramen--chorda tympani
 - E. Superior orbital fissure--ophthalmic division of V
27. Each of the following statements regarding the coronary circulation is CORRECT EXCEPT:
- A. The anterior interventricular branch of the left coronary artery is the chief supply to the interventricular septum.
 - B. The artery to the atrioventricular node usually arises from the posterior interventricular branch of the right coronary artery.
 - C. At its origin from the ascending aorta the left coronary artery courses anterior to the pulmonary trunk
 - D. The coronary arteries supply the wall of the ascending aorta
 - E. The anterior cardiac vein usually empties directly into the right atrium

28. Choose the INCORRECT statement concerning the pleurae:
- A. Parietal pleura consists of mediastinal, costal, diaphragmatic, and cervical (cupola) parts
 - B. The pulmonary ligaments anchor the apex of the lungs in the cervical (cupola) pleura
 - C. The surface projection of the inferior border of the lungs is two-rib levels superior to that of the pleura
 - D. A costomediastinal recess forms due to the reflection of costal and mediastinal pleurae
 - E. The mediastinal pleura serves to define the lateral boundaries of the superior, anterior, middle and posterior subdivisions of the mediastinum
29. All of the following statements concerning bronchopulmonary segments are CORRECT EXCEPT:
- A. Bronchopulmonary segments are separated by connective tissue septa
 - B. Each bronchopulmonary segment is drained by its own vein which follows the bronchial tree
 - C. Bronchopulmonary segments may be individually removed by segmental surgery
 - D. Each bronchopulmonary segment is served by one and only one tertiary bronchus
 - E. Each bronchopulmonary segment is served by its own artery which follows the bronchial tree
30. Choose the INCORRECT statement concerning the cardiac plexus:
- A. It consists of a mixed plexus of sympathetic, parasympathetic, and visceral sensory fibers
 - B. It receives postganglionic parasympathetic fibers from the cervical vagal nerves
 - C. It includes visceral sensory fibers for reflex activity from the heart carried by the vagal cardiac nerves
 - D. It is formed from cervical, cervicothoracic, and thoracic cardiac nerves
 - E. It includes visceral sensory fibers for cardiac pain carried by the sympathetic cardiac nerves

31. Each of the following matches of cardiac structure and location is CORRECT EXCEPT:
- A. Sinuatrial (SA) node - anterolaterally at the of the superior vena cava and right atrium
 - B. Atrioventricular (AV) node - interatrial immediately above the opening of the coronary sinus
 - C. Atrioventricular (AV) bundle - membranous part the interventricular septum
 - D. Left branch of AV bundle - septomarginal(moderator band)
 - E. Valve of coronary sinus - right atrium
32. Choose the INCORRECT statement concerning the colon:
- A. The transverse colon varies in position and may extend into the pelvis
 - B. The transverse mesocolon fuses superiorly with the greater omentum and inferiorly it is continuous with the mesentery of the small intestine.
 - C. Whereas all portions of the colon have taeniae coli, epiploic appendages, and haustrae, the ascending and descending portions are retroperitoneal, and the transverse and sigmoid portions are peritoneal
 - D. The appendix is peritoneal but the mesoappendix is not a true mesentery
 - E. Ligature (tying off) of the left colic artery would deprive the descending colon of its blood supply

33. The external spermatic fascia is a prolongation of which of the following specific structures:
- A. The external abdominal oblique muscle
 - B. The fascia of the external abdominal oblique muscle
 - C. The aponeurosis of the external abdominal oblique muscle
 - D. The fascia of the internal abdominal oblique muscle
 - E. The internal abdominal oblique muscle and its fascia
34. Each of the following statements concerning the scrotum and testis is CORRECT EXCEPT:
- A. Lymphatics of the testis drain to lumbar lymph nodes
 - B. The artery of the ductus deferens anastomoses with the testicular artery near the testis
 - C. The anteromedial surface of the scrotum is innervated by the ilioinguinal nerve
 - D. The dartos muscle lies between the external spermatic fascia and the cremasteric fascia
 - E. Lymphatic vessels of the scrotum drain into the superficial inguinal lymph nodes
35. All of the following statements concerning the blood supply to the structures of the abdomen are CORRECT EXCEPT:
- A. The right and left gastric arteries supply the lesser curvature of the stomach whereas the right and left gastroepiploic arteries supply its greater curvature
 - B. The superior (first) part of the duodenum is supplied by straight arteries (vasa rectae) from the pancreaticoduodenal arteries
 - C. The ileocolic artery supplies the cecum, appendix, and part of the ascending colon
 - D. The inferior mesenteric artery supplies the descending and sigmoid colons, and the rectum
 - E. All of the colic arteries have anastomotic branches which join to form a marginal artery

36. Each statement concerning the diaphragm is CORRECT EXCEPT:
- A. The diaphragm descends when it contracts thereby decreasing intrathoracic pressure
 - B. Each half of the diaphragm has a separate nerve supply, and paralysis of one half does not seriously affect the other half
 - C. The central tendon of the diaphragm is developed from the embryonic septum transversum
 - D. The aortic opening transmits the aorta, and the thoracic duct
 - E. The median arcuate ligament is a thickening of the psoas fascia
37. The CORRECT sequence of urine flow is indicated by which one of the following:
- A. Renal papilla - major calyx - minor calyx - renal pelvis - ureter
 - B. Minor calyx - renal papilla - major calyx - renal pelvis - ureter
 - C. Renal papilla - major calyx - renal pelvis - minor calyx - ureter
 - D. Renal papilla - minor calyx - major calyx - renal pelvis - ureter
 - E. Minor calyx - major calyx - renal papilla - renal pelvis - ureter

38. Each statement concerning the liver is CORRECT EXCEPT:
- A. The division between the functional right and left lobes of the liver is indicated by a plane joining the fossae of the inferior vena cava and the gallbladder
 - B. The fissure for the ligamentum teres separates the caudate lobe from the quadrate lobe
 - C. The cystic artery commonly arises from the right hepatic artery in the angle between the common hepatic duct and cystic duct
 - D. The bare area of the liver is related to the diaphragm
 - E. The lesser omentum is attached to the margins of the porta hepatis
39. All of the following are areas of attachment for the gluteus maximus muscle EXCEPT:
- A. Posterior iliac crest
 - B. Iliotibial tract
 - C. Sacrospinous ligament
 - D. Lateral sacrum
 - E. Gluteal tuberosity
40. Regarding the gluteal region and related structures, all are CORRECT EXCEPT:
- A. The gluteus maximus muscle is innervated by the inferior gluteal nerve
 - B. The superior gluteal artery supplies the gluteus maximus, medius and minimus muscles
 - C. The pudendal nerve exits the pelvis through the greater sciatic foramen
 - D. The gluteus medius muscle attaches between the anterior and inferior gluteal lines
 - E. The superior gluteal nerve carries somatic motor and somatic sensory nerve fibers

41. Regarding the piriformis, obturator internus, inferior and superior gemelli and quadratus femoris muscles, all statements are CORRECT EXCEPT:
- A. They attach to the femur or to a tendon that attaches to the femur
 - B. They are located deep to the gluteus maximus muscle
 - C. They laterally rotate the thigh at the hip joint
 - D. They are innervated by branches of the sciatic nerve
 - E. The proximal attachments of two of them are located within the pelvis
42. Regarding the posterior thigh, all statements are CORRECT EXCEPT:
- A. The short head of the biceps femoris muscle attaches to the linea aspera
 - B. The long head of the biceps femoris muscle attaches to the ischial tuberosity
 - C. In part of its course, the sciatic nerve is posterior to the adductor magnus muscle
 - D. Branches of the posterior femoral cutaneous nerve innervate skin of the gluteal region
 - E. The hamstring muscles flex at the hip joint and extend at the knee joint
43. Regarding the popliteal fossa, all statements are CORRECT EXCEPT:
- A. The popliteal artery enters the fossa through the femoral triangle
 - B. The common fibular nerve can be partially obscured by the biceps femoris tendon
 - C. Within or near the fossa the tibial nerve innervates muscles which plantarflex the foot
 - D. The genicular arteries are branches of the popliteal artery
 - E. The oblique popliteal ligament is derived from the semimembranosus muscle tendon

44. All of the following are CORRECT EXCEPT:
- A. A blood supply to the hamstring muscles is from the perforating arteries
 - B. Sural arteries from the popliteal artery supply both heads of the gastrocnemius muscle
 - C. The tibial and common fibular nerves contribute to the formation of the sural nerve
 - D. In the fossa, the popliteal artery is posterior to the popliteal vein and tibial nerve
 - E. The common fibular division of the sciatic nerve innervates the short head of the biceps
45. Which of the following is INCORRECT regarding the fascia lata and related structures:
- A. It is attached superiorly to the subcutaneous portions of the bony pelvis, inguinal ligament (anteriorly) and the sacrotuberous ligament (posteriorly).
 - B. Both the fatty and membranous layer of the superficial fascia fuses with the fascia lata to form the iliotibial tract
 - C. The lateral intermuscular septum is an inward extension of the iliotibial tract
 - D. The medial intermuscular septum is an inward extension of the fascia lata which separates the vastus medialis and the adductor group of muscles
 - E. The fascia lata is continuous with the crural fascia
46. Which of the following is INCORRECT regarding the sartorius muscle:
- A. It takes its origin from the anterior superior iliac spine
 - B. It has only one action: flexion of the leg
 - C. It is innervated by the femoral nerve
 - D. It has a common tendon of insertion known as the pes anserinus
 - E. Its tendon of insertion is associated with the bursa anserina

47. Which of the following is CORRECT regarding the femoral sheath:
- A. The transversalis fascia forms the posterior part of the sheath
 - B. The fascia iliaca (fascia over the iliacus muscle) forms the anterior part of the sheath
 - C. Three components of the femoral sheath from lateral to medial are: femoral artery, femoral vein, femoral canal
 - D. The femoral canal contains the femoral nerve
 - E. The femoral sheath contains the obturator artery, obturator vein, saphenous nerve, and the nerve to the vastus medialis
48. Which of the following is INCORRECT regarding the muscles of the extensor compartment of the leg:
- A. They are located anterior to the interosseus membrane between the lateral surface of the tibia and the anterior intermuscular septum
 - B. All four muscles of the compartment are innervated by the deep fibular nerve
 - C. Paralysis of the tibialis anterior muscle results in foot drop
 - D. The blood supply to all four muscles is the posterior tibial artery
 - E. All four muscles are dorsiflexors of the foot or extensors of the toes

49. Which of the following is CORRECT regarding the muscles of the lateral compartment of the leg:
- A. The compartment contains muscles which are primarily dorsiflexors and invertors of the foot
 - B. The tendons of these muscles pass anterior to the lateral malleolus
 - C. The tendons are separated by individual synovial sheaths
 - D. Violent inversion of the foot may avulse the tuberosity of the 5th metatarsal bone at the site of attachment of the peroneus brevis tendon
 - E. All the muscles are innervated by the deep peroneal nerve
50. Which of the following is INCORRECT regarding the posterior tibial artery:
- A. The posterior tibial artery is a terminal branch of the popliteal artery
 - B. It passes deep to the soleus (with the tibial nerve) after giving off the fibular (peroneal) artery
 - C. It gives rise to the nutrient artery of the tibia
 - D. The pulse of the posterior tibial artery can usually be palpated about halfway between the lateral malleolus and the lateral border of the tendo calcaneus
 - E. Palpating the pulse of this artery is essential for examining patients with a condition known as "intermittent claudication"
51. Steppage gait is a symptom of an injury to which of the following:
- A. Sciatic nerve
 - B. Femoral nerve
 - C. Tibial nerve
 - D. Common fibular nerve
 - E. Obturator nerve

52. A positive Trendelenberg sign is indicative of an injury to which of the following nerves:
- A. Sciatic
 - B. Superior gluteal
 - C. Femoral
 - D. Inferior gluteal
 - E. Obturator
53. Which one of the following symptoms is NOT a result of an injury to the femoral nerve:
- A. Loss of leg extension
 - B. Loss of knee jerk (patellar) reflex
 - C. Inability to adduct the thigh at the hip joint
 - D. Hip flexion weakened
 - E. Sensory loss on the medial surface of the leg
54. Which one of the following is NOT a part of the medial deltoid) ligament:
- A. Anterior inferior talofibular ligament
 - B. Tibionavicular ligament
 - C. Posterior tibiotalar ligament
 - D. Tibiocalcanean ligament
 - E. Anterior tibiotalar ligament
55. The ankle joint (tibiotalar) is what type of joint:
- A. Condylloid type
 - B. Pivot type
 - C. Plane type
 - D. Hinge type
 - E. Saddle type

56. Which one of the following muscles does NOT attach to the fibula:
- A. Fibularis longus
 - B. Biceps femoris
 - C. Soleus
 - D. Tibialis posterior
 - E. Flexor hallucis longus
57. Which one of the following arteries does not usually provide blood to the region of the knee:
- A. Deep femoral
 - B. Anterior tibial
 - C. Popliteal
 - D. Femoral
 - E. Inferior gluteal
58. The most important structure which prevents hyperextension of the knee joint is:
- A. Posterior cruciate ligament
 - B. Anterior cruciate ligament
 - C. Tibial collateral ligament
 - D. Fibular collateral ligament
 - E. Patellar ligament

59. The popliteus muscle separates which two of the following structures in the region of the knee:
- A. Lateral meniscus and the fibular collateral ligament
 - B. Medial meniscus and the tibial collateral ligament
 - C. Anterior cruciate ligament and the posterior cruciate ligament
 - D. The capsule of the knee and the tibial collateral ligament
 - E. The plantaris muscle and the two heads of the gastrocnemius
60. Ossification of the acetabulum is usually complete after what age:
- A. 1 Year
 - B. 5 Years
 - C. 12 Years
 - D. 17 Years
 - E. 23 Years
61. The paired skin dimples on the posterior surface of the pelvis approximately 4 cm lateral to the median plane indicate the location of which one of the following structures:
- A. Iliac crest
 - B. Greater sciatic notch
 - C. Posterior superior iliac spine
 - D. Sacroiliac joint
 - E. Lumbar triangle

62. A 69 year old man spent the evening consuming copious quantities of beer. Prior to relieving himself, an altercation resulted in his being shot in the pelvis. The bullet pierced the linea alba immediately superior to the pubic symphysis and exited through the sacrococcygeal joint. All of the following structures would probably be pierced by the bullet EXCEPT:
- A. Rectovesical septum (fascia)
 - B. Median (middle) sacral artery
 - C. Detrusor muscle
 - D. Peritoneal cavity
 - E. Ampulla of the rectum
63. With regard to the external genitalia of the male all the following statements are CORRECT EXCEPT:
- A. Lightly stroking the skin of the anterior medial right thigh will elevate the contralateral testicle by stimulating contraction of its cremaster muscle via the genitofemoral nerve
 - B. The excruciating pain produced by a blow to the testicles (and/or epididymides) results from stimulation of visceral afferent nerve fibers
 - C. Lounging in a "hot-tub" will induce relaxation of the dartos muscle and result in a pendulus scrotum
 - D. Some sexually transmitted disease (STDs) may produce inflammation of the navicular fossa and will result in the sensation of pain via the pudendal nerve (S-2, S-3, S-4).
 - E. With regard to the scrotum, a spinal anesthetic agent must act more superiorly to anesthetize its anterior surface than its posterior surface

64. While performing tricks on his new mountain bike, to impress the women in his class, a medical student fell astride the cross bar, resulting in the rupture of the penile urethra (within the bulb of the penis) into the superficial perineal space. In such a case, you would expect urine to possibly appear in any of the following sites EXCEPT:
- A. Superiorly - in the abdominal wall (suprapubically)
 - B. Anteriorly - deep to the superficial fascia of the penis
 - C. Inferiorly - within the scrotum deep to the dartos layer
 - D. Posteriorly - within the anal triangle
 - E. Within the lumen of the spongy (penile) urethra
65. Concerning the vagina, each statement is CORRECT EXCEPT:
- A. Its posterior wall is apposed to the cervix
 - B. Its inferior 1/3 is innervated by the pudendal nerve
 - C. Its posterior fornix is related to the uterovesical pouch (space)
 - D. Its long axis lies in a plane parallel to that of the pelvic inlet
 - E. Its anterior wall is related to the urethra
66. Concerning the ovary, each statement is CORRECT EXCEPT:
- A. Its suspensory ligament contains the ovarian vessels and nerves
 - B. It may lie close to the ureter
 - C. It is attached by the mesovarium to the posterior layer of the broad ligament
 - D. The surface of the ovary is covered by peritoneum
 - E. It is attached to the uterus by the ligament of the ovary

- 67 Regarding the vagina all of the following are **TRUE EXCEPT**:
- A. An instrument passed through the posterior fornix of the vagina will enter the rectouterine fossa (pouch)
 - B. Part of the posterior wall is covered with peritoneum
 - C. Its blood supply is usually from the internal iliac or uterine arteries
 - D. Its lateral fornix is related to the vestibular bulbs
 - E. When the urinary bladder is empty it usually makes about a 90 degree angle with the axis of the uterus

Question number 68 refers to the accompanying diagram.

68. With regard to the structure labeled "E" all are correct EXCEPT:
- A. It is formed by the ilium, ischium and pubic bones which are separated by cartilage before puberty but which are fused in the adult
 - B. Its depth is increased by the presence of a fibrocartilaginous labrum
 - C. It is a part of a ball-and-socket type joint and is lined with cartilage
 - D. The strength with which it holds the head of the femur is greatly increased by the intracapsular ligament of the head of the femur in the adult
 - E. The range of mobility of the head of the femur within it results from the neck of the femur being much narrower in diameter than the head of the femur

Question number 69 refers to the accompanying diagram.

69. All of the following statements regarding the region inferior to the line of arrows in the anal canal are CORRECT EXCEPT:
- A. Its lymphatic drainage is primarily to superficial inguinal lymph nodes
 - B. It is innervated by the spinal segments S2, S3, and S4 and responsive to pain, touch and temperature
 - C. Its venous drainage is principally via the inferior rectal veins
 - D. Hemorrhoids originating here are covered by skin and can be a source of irritation
 - E. Although its walls are surrounded by the ischial anal fat pads, it is not very distensible

Questions 70 and 71 refer to the following case study.

A 68 year old male reported to the emergency room because he experienced difficulty urinating and noticed blood in his urine. The urologist inserted the cystoscope (rigid viewing tube) through the patient's urethra into the lumen of the bladder. The physician turned to a group of first year medical students and asked them to give him an overview of the anatomy and relationships of the area being examined. All but one of the student's responses were correct.

70. CHOOSE the INCORRECT student response.

- A. The ejaculatory ducts open into the prostatic urethra on its posterior wall
- B. The sensory innervation of the penile urethra is provided by pelvic splanchnic nerves
- C. The external urethral orifice (meatus) is the narrowest part of the male urethra
- D. Caution must be exercised in traversing the membranous urethra because it has a thin wall and is at an angle relative to the penile urethra in the bulb of the penis
- E. The sphincter muscle fibers (sphincter urethrae) around the membranous urethra are part of the deep transverse perineal muscle, are innervated by the pudendal nerve and are under voluntary control.

71. After inspecting the interior of the patient's urinary bladder, the physician included the following observations in his report. Which one is in ERROR:

- A. The mucosa of the trigone was smooth surfaced and firmly attached
- B. The superior boundary of the trigone was defined by the interureteric fold connecting the right and left ureteric orifices
- C. The uvula vesica, produced by the middle lobe of the prostate gland, was seen anterior to the internal urethral orifice
- D. The wall of the bladder was highly distensible
- E. The mucosa lining the superior and right and left posterolateral walls was loose and rugose

Questions 72 and 73 refer to the accompanying diagram.

72. With regard to typical gender differences in the anatomy of the bony pelvis, all of the following statements concerning the female pelvis relative to that of the male are correct EXCEPT:
- A. Structure F is less prominent
 - B. Structure C is less prominent
 - C. Structure D (the angle) is more narrow
 - D. Structure A is less prominent
 - E. Structure G is smaller and less dense

73. With regard to the space labeled "B" all of the following statements are CORRECT EXCEPT:
- A. It is related to the sciatic nerve
 - B. The muscle which exits the pelvic cavity through it laterally rotates the thigh
 - C. The nerve arising only from of the ventral rami of S2, S3, and S4 which exits the pelvis through it, passes posterior to the sacrospinous ligament
 - D. It is covered over anteriorly by the obturator internus muscle and its fascia
 - E. It is partially covered over posteriorly by the gluteus medius muscle

Questions 74 and 75 refer to the accompanying diagram.

74. This diagram illustrates nerves of obstetrical and gynecological importance which are frequently anesthetized by injection of local anesthetic at the sites indicated. With regard to the nerve involved at site "A" all of the following statements are CORRECT EXCEPT:
- A. Injection of local anesthetic will result in loss of sensation in the ipsilateral labium majus
 - B. A portion of the nerve anesthetized traverses the superficial inguinal ring
 - C. It arises from spinal segment L-1 and enters the abdomen posterior to the medial arcuate ligament
 - D. Injection of local anesthetic will anesthetize nerves for the sensations of pain, touch and temperature in the glans clitoridis
 - E. It pierces the transversus abdominis muscle medial to the anterior superior iliac spine

75. With regard to the nerve involved at site "B" all the following statements are CORRECT EXCEPT:
- A. It is related to the obturator internus muscle inferior to the pelvic diaphragm
 - B. It innervates the contents of the urogenital diaphragm; therefore, injection of local anesthetic at site "B" would result in the loss of voluntary control of urination
 - C. Injection of local anesthetic would anesthetize the inferior one-third of the vagina and its orifice
 - D. Injection of local anesthetic at site "B" would block innervation of both the ischiocavernosus and bulbospongiosus muscles
 - E. Injection of local anesthetic would anesthetize the anal canal superior to the pectinate line

Select the option (A-G) in the accompanying diagram which best fits the statements numbered 76-80.

76. This structure maintains the perineal flexure of the anal canal at approximately 90 degrees and relaxes during defecation:

77. This structure relaxes reflexly when the ampulla of the rectum is distended by a fecal mass: _____

78. This structure is innervated by the pudendal nerve and is under voluntary control: _____

79. The lymphatic drainage of this region is primarily into internal iliac nodes: _____

80. Veins draining this region flow into the systemic venous system (vena cava): _____

With regard to the prostate gland, all the following statements are TRUE EXCEPT:

- A. Its venous plexus is between its visceral fascia and its fibrous capsule
- B. Its middle lobe is located between the ejaculatory ducts and the urethra
- C. Its smooth muscle is innervated by sympathetic nerves
- * D. The ejaculatory ducts open into the prostatic utricle
- E. It can be palpated through the anterior wall of the rectum

Concerning the ovary, each statement is CORRECT EXCEPT:

- A. Its suspensory ligament contains the ovarian vessels and nerves
- B. It may lie close to the ureter
- C. It is attached by the mesovarium to the posterior layer of the broad ligament
- * D. The surface of the ovary is covered by peritoneum
- E. It is attached to the uterus by the ligament of the ovary

Regarding the female genitalia, which of the following statements is INCORRECT:

- A. The greater vestibular glands open into the vestibule of the vagina
- B. The labia minora attach to the clitoris
- C. The urethra opens into the vestibule of the vagina
- * D. The bulb of the vestibule is the homologue of the bulbourethral gland of the male
- E. The mons pubis is innervated by the ilioinguinal nerve and genital branch of the genitofemoral nerve

With regard to the male reproductive tract all of the following statements are CORRECT EXCEPT:

- A. The sympathetic nerves are involved in peristalsis of the epididymis, ductus deferens, contraction of the seminal vesicles, and contraction of the smooth muscle fibers of the prostate gland
- B. The bulbourethral glands are located in the deep perineal space, are related to the membranous urethra, are embedded in the sphincter urethrae muscle and release their secretion into the spongy (penile) urethra
- C. The seminal vesicles are related to the fundus of the bladder, the anterior wall of the rectum, and are partially covered by peritoneum
- * D. The ductus deferens courses inferior to the ureter
- E. The pudendal nerve is motor to the sphincter urethrae, bulbospongiosus and ischiocavernosus muscles and sensory to the glans penis and spongy (penile) urethra

With regard to the prostate gland all the following statements are CORRECT EXCEPT:

- A. Its venous plexus is located between its capsule and fascial sheath and communicates with the vesical venous and the vertebral venous plexuses
- B. Benign prostatic hypertrophy must frequently involves its middle lobe and may result in nocturia and/or dysuria
- C. Its secretions provide about 70% of the column of semen and are released into the prostatic urethra via its ejaculatory ducts
- D. It is related inferiorly to the urogenital diaphragm, posteriorly to the rectovesical septum, superiorly to the neck of the bladder and laterally to the levator ani muscle
- E. Its lymphatic drainage is chiefly to the internal iliac and sacral lymph nodes

Choose the INCORRECT pairing of pelvic fascia and content:

- A. Lateral ligament of the bladder in the male - ductus (vas) deferens
- B. Lateral ligament of the bladder in the female - ureter
- C. Lateral puboprostatic ligament in the male - inferior vesical artery
- D. Lateral cervical (cardinal) ligament in the female - ureter
- E. Lateral ligament of the rectum (rectal stalk) - middle rectal artery

Regarding the vagina all of the following are TRUE EXCEPT:

- A. An instrument passed through the posterior fornix of the vagina will enter the rectouterine fossa (pouch)
- B. Part of the posterior wall is covered with peritoneum
- C. Its blood supply is usually from the internal iliac or uterine arteries
- * D. Its lateral fornix is related to the vestibular bulbs
- E. When the urinary bladder is empty it usually makes about a 90 degree angle with the axis of the uterus

While performing tricks on his new mountain bike, to impress the women in his class, a medical student fell astride the cross bar, resulting in the rupture of the penile urethra (within the bulb of the penis) into the superficial perineal space. In such a case, you would expect urine to possibly appear in any of the following sites EXCEPT:

- A. Superiorly - in the abdominal wall (suprapubically)
- B. Anteriorly - deep to the superficial fascia of the penis
- C. Inferiorly - within the scrotum deep to the dartos layer
- * D. Posteriorly - within the anal triangle
- E. Within the lumen of the spongy (penile) urethra

With regard to the space labeled "B" all of the following statements are correct EXCEPT:

- A. It is related to the sciatic nerve
- B. The muscle which exits the pelvic cavity through it laterally rotates the thigh
- C. The nerve arising only from of the ventral rami of S2, S3, and S4 which exits the pelvis through it, passes posterior to the sacrospinous ligament
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With regard to typical gender differences in the anatomy of the bony pelvis, all of the following statements concerning the female pelvis relative to that of the male are correct EXCEPT:

- A. Structure F is less prominent
- B. Structure C is less prominent
- * C. Structure D (the angle) is more narrow
- D. Structure A is less prominent
- D. Structure G is smaller and less dense

With regard to the structure labeled "E" all are correct EXCEPT:

- A. It is formed by the ilium, ischium and pubic bones which are separated by cartilage before puberty but which are fused in the adult
- B. Its depth is increased by the presence of a fibrocartilaginous labrum
- C. It is a part of a ball-and-socket type joint and is lined with cartilage
- * D. The strength with which it holds the head of the femur is greatly increased by the intracapsular ligament of the head of the femur in the adult
- E. The range of mobility of the head of the femur within it results from the neck of the femur being much narrower in diameter than the head of the femur