**Question 1**

Which of the following movements occurs at the subtalar joint?

A Equinovarus

B Dorsiflexion

C Plantarflexion

D Eversion

Explanation D

The subtalar joint is also known as the talocalcaneal joint. It allows inversion and eversion of the foot but plays no role in dorsiflexion and plantar flexion of the foot.

**Question 2**

Which of the following muscles causes dorsiflexion and inversion of the ankle and foot?

A Extensor hallucis longus

B Tibialis anterior

C Peroneus tertius

D Tibialis posterior

Explanation B

Tibialis anterior causes dorsiflexion of the ankle joint and inversion of the foot. It also helps to maintain the medial longitudinal arch.

**Question 3**

Regarding the foot interossei, which of the following statements is true?

A The long axis of the foot lies along the 3rd metatarsal

B Supplied by medial plantar nerve

C The plantar interossei have 2 heads

D When acting together flex metarso-phalangeal joint (MTP)

Explanation D

The plantar interossei have 3 heads, are supplied by the lateral plantar nerve and the long axis lies along the second metatarsal. The lateral plantar nerve S2 S3 supplies it. From older textbooks it states that the function of the interossei are as follows: The adducting and abducting actions of the interossei are of little significance in the foot. The more important function is that they assist the lumbricals in extending the interphalangeal joints and the flex the MTP joints

**Question 4**

Regarding the medial longitudinal arch of the foot, which of the following is false?

A The most important muscular supporting structure is the tendon of flexor hallucis longus

B The pillars of the arch are the tuberosity of the calcaneus posteriorly and the bodies of the three metatarsal bones anteriorly

C Bones contribute little to arch stability

D The most important ligament is the plantar aponeurosis

Explanation B

The pillars of the medial longitudinal arch are the tuberosity of the calcaneus posteriorly and the HEADS of the three metatarsal bones anteriorly. Bony factors do not play a significant role in maintaining the stability of the arch. Ligaments are important but unable to maintain the arch entirely on their own. Muscles are indispensable to the arch maintenance

Note: in the old prescribed text of anatomy- Bony factors do not play a significant role in maintaining the stability of the arch. in the new prescribed text it states: the shape of the united bones are passive factors involved in the forming and maintaining of the arches (especially the transverse arch) The shape of the united bones is also an important factor for forming and maintaining the arches

Also: the current TB states in order of importance for maintaining the arches: the plantar calcaneonavicular ligament (main supporter of the medial longitudinal arch), the long plantar ligament (main supporter of the lateral longitudinal arch), THEN the plantar aponeurosis followed by the plantar calcaneocuboid ligament. The old prescribed TB clearly stated that the PLANTAR APONEUROSIS IS THE MOST IMPORTANT LIGAMENT.

**Question 5**

With regard to the femoral nerve, which of the following statements is correct?

A It runs in the adductor canal

B Deep and superficial branches of the nerve are separated by the lateral femoral circumflex artery

C The nerve originates from anterior divisions of the anterior rami of the lumbar nerves

D It enters the thigh by passing deep to the inguinal ligament lateral to the artery in the femoral sheath.

Explanation B

The saphenous nerve and the nerve to vastus medialis run in the adductor canal. The origin of the nerve is the posterior division of the anterior rami of the lumbar nerves 2,3,4. It enters the thigh deep to the inguinal ligament, lateral to the artery but outside the femoral sheath. The lateral circumflex femoral artery passes between the branches of the femoral nerve

**Question 6**

Regarding the ligaments of the knee, which of the following statements is correct?

A The posterior cruciate stops the tibia slipping forward on the femur

B The posterior cruciate ligament is attached to the medial condyle of the femur

C Lateral collateral ligament makes a significant contribution to the capsule

D The posterior cruciate is longer and stronger than the anterior cruciate ligament

Explanation B

The posterior cruciate is stronger but shorter than the anterior cruciate ligament. Posterior cruciate stops the femur slipping on the tibia. The lateral collateral does not attach to the capsule of the knee joint.

**Question 7**

Regarding the ankle joint, which of the following statements is correct?

A The deep part of the deltoid ligament is triangular in shape

B The capsule attaches to the articular margins of the tibia, fibula and anterior talus

C The lateral ligament attaches to talus and calcaneus

D It has a fixed axis of rotation

Explanation C

The capsule is attached to the articular margins of all three bones (the current textbook says the articular surfacers of the tibia and the malleoli and inferiorly to the talus) but it is attached to the inferior part of the talus not the anterior part, and the joint does not have a fixed axis of rotation. The superficial part of the deltoid ligament is triangular.

Note:

The ankle joint is reinforced laterally by the lateral ligament of the ankle, a compound structure consisting of three completely separate ligaments

Anterior talofibular ligament

Posterior talofibular ligament

Calcaneofibular ligament

Medially reinforced by the medial ligament of the ankle, deltoid ligament, made up of 4 parts

Tibionavicular part

Tibiocalcaneal part

Anterior tibiotalar part

Posterior tibiotalar part

**Question 8**

Which muscle takes origin from the tibia and the fibula?

A Tibialis posterior

B Flexor digitorium longus (FDL)

C Flexor hallucis longus

D Peroneus longus

Explanation A

Tibialis posterior arises from the interosseus membrane and the adjoining surface of both bones of the leg below the origin of soleus

Note: in the current TB it states that FDL arises from the medial part of the posterior surface of the tibia inferior to the soleal line; by a broad tendon to fibula

Wed searches seems to given the origin as tibia alone

Last’s anatomy-form where the question arises: FDL arise from the posterior surface of the tibia below the soleal line

This is an old question-therefore, I will leave in current form

**Question 9**

Which of the following muscles causes inversion of the foot?

A Tibialis posterior

B Extensor halliucis brevis

C Peroneus tertius

D Peroneus brevis

Explanation A

Tibialis posterior acts to invert and adduct the forefoot. Because it passes behind the medial malleolus to plantarflex the ankle joint, it also contributes to maintaining the medial longitudinal arch of the foot

**Question 10**

Which of the following bones is not part of the transverse arch of the foot?

A Navicular

B Cuboid

C Cuneiform

D Base of all the metatarsals

Explanation A

The transverse arch of the foot runs from side to side. It is formed by the cuboid, cuneiforms and the bases of the metatarsals. The medial and lateral parts of the longitudinal arch serve as pillars fro the transverse arch. The tendons of fibularis longus and tibialis posterior cross under the sole of the foot like a stirrup and help maintain the curvature of the transverse arch.

**Question 11**

Which is true as regards the layers of the foot?

A The 2nd layer comprises the long tendons and the lumbricals

B The fourth layer contains the tendons of tibialis posterior and peroneus brevis

C The plantar aponeurosis can be regarded as the 5th layer

D The third layer comprises the flexor digitorum brevis

Explanation A

The plantar aponeurosis does not feature in any of the layers. Flexor digitorum brevis is in the 1st layer. The 4th layer does not contain peroneus brevis

An important question fro the MCQs and the VIVAs

First layer: flexor digitorum brevis, abductor hallucis and abductor digiti minimi

Second layer: tendon of flexor hallucis longus, tendon of flexor digitorum longus, quadratus plantae and lumbricals

Third layer: flexor hallucis brevis, adductor hallucis and flexor digiti minimi breivs

Fourth layer: interosseous muscles (dorsal and plantar), tendon of peroneus longus and tendon of tibialis posterior

**Question 12**

Which of the following does not insert into the greater trochanter?

A Superior gemellus

B Gluteus maximus

C Obturator externus

D Piriformis

Explanation B

Obturator externus inserts on the medial surface of the greater trochanter into a deep pit, the trochanteric fossa. The deep half of the lower portion of gluteus maximus is inserted into the gluteal tuberosity of the femur.The remaining three-quarters of the muscle is inserted into the upper end of the iliotibial tract.

**Question 13**

Regarding the menisci of the knee, which of the following statements is correct?

A The medial meniscus is vascular

B The anterior horn of medial meniscus is attached to medial tibial condyle

C A fold of synovium lies posterior to anterior cruciate

D The posterior cruciate ligament (PCL) extends anteromedially and is attached to the anterolateral aspect of the medial femoral condyle

Explanation D

The medial meniscus is avascular. The fold of synovium does not lie posterior to the anterior cruciate and the anterior horn of the medial meniscus is attached to the anterior intercondylar area of the tibia.

Note: a way to remember the PCL and ACL details is that each of them needs to have an anterior, posterior, medial and lateral element to it. i.e. PCL attaches to anterolateral part of the medial femoral condyle ACL attaches to the posteromedial aspect of the lateral femoral condyle.

**Question 14**

Regarding the adductor canal, which of the following statements is correct?

A The femoral artery lies between the saphenous nerve and femoral vein

B The nerve to vastus lateralis passes through it

C Adductor longus forms the roof

D The vein is medial to the artery throughout

Explanation A

The nerve to vastus medialis passes through the adductor canal The femoral vein is posterolateral to the artery in the distal part of the canal. Adductor longus forms the floor.

**Question 15**

All of the following make up the medial arch of the foot except?

A Calcaneous

B Cuboid

C The first three metatarsals

D Navicular

Explanation B

The bones of the medial longitudinal arch (MLA) of the foot are calcaneus, talus, navicular, the three cuneiform bones and their three metatarsals. The pillars of the arch are the tuberosity of the calcaneus posteriorly and the heads of the three metatarsals anteriorly. The keystone of the medial longitudinal arch is the talar head. Tibialis anterior attaching to the first metatarsal and medial cuneiform helps strengthen the MLA. The fibularis longus tendon passing from lateral to medial, also helps support this arch

**Question 16**

All of the following drain into the great saphenous vein except?

A Deep external pudendal

B Superficial epigastric

C Deep circumflex iliac

D Superficial circumflex iliac

Explanation C

A number of tributaries may be expected to join the great saphenous vein in the region of the saphenous opening. There are usually four veins that correspond to the four cutaneous branches of the femoral artery- superficial circumflex iliac, superficial epigastric, superficial and deep external pudendal. In addition there may be a deep vein that pierces the fascia lata over adductor longus

**Question 17**

All of the following are branches of the femoral artery except?

A Profunda femoris

B Obturator

C Superficial epigastric

D Superficial circumflex iliac

Explanation B

The following are the branches of the femoral artery

Superficial epigastric,

Superficial circumflex iliac

Superficial external pudendal

Deep external pudendal

Profunda femoris

Superior genicular

Muscular

Note: the latest text says: sometimes the femoral artery gives off the deep circumflex iliac artery. The lateral and medial circumflex femoral arteries arise form the profunda femoris BUT may arise from the femoral artery

**Question 18**

Which of the following passes through the lesser sciatic foramen?

A Internal pudendal artery

B The superior gemellus

C Piriformis

D Superior gluteal artery

Explanation A

It transmits the following structures:

The tendon of obturator internus

Internal pudendal artery

Internal pudendal veins

Pudendal nerve

Nerve to obturator internus

**Question 19**

Which of the following statements concerning the femoral triangle is false?

A The lateral border is the medial border of sartorius

B Adductor longus is a medial boundary

C It contains superficial inguinal lymph nodes and associated lymphatic vessels

D Femoral vein receives the great saphenous and the deep femoral vein

Explanation C

The following structures are contained within the femoral triangle (from lateral to medial):

Terminal part of the femoral nerve and its branches

Femoral sheath

Femoral artery and its branches

Femoral veins and its tributaries

Femoral canal, containing the deep inguinal lymph nodes and associated lymphatic vessels

It is bounded by:

(superiorly) the inguinal ligament

(medially) the medial border of the adductor longus muscle

(laterally) medial border of the Sartorius muscle

CONFLICT- OLD TEXTBOOK AND WED SOURCES REPORT THE MEDIAL BORDER OF THE FEMORAL TRIANLGE IS: MEDIAL BORDER OF ADDUCTOR LONGUS. THE CURRENT TEXTBOOK REPORTS: MEDIAL BORDER IS THE LATERAL BORDER OF ADDUCTOR LONGUS

Its floor is provided laterally by iliopsoas, medially by pectineus and adductor longus

The roof is formed by the fascia lata

The femoral triangle is shaped like the sail of a ship.

Its boundaries can be remembered using the mnemonic "SAIL" for Sartorius, Adductor longus and Inguinal Ligament.

**Question 20**

Which of the following structures is not in the 3rd layer of the sole?

A Flexor digiti minimi brevis

B Flexor hallucis brevis

C Peroneus longus

D Adductor hallucis

Explanation C

Peroneus longus is in the 4th layer.

According to Last's anatomy and various web sources, peroneus (fibularis) longus is included in the fourth layer. Tibialis posterior is also included.

**Question 21**

Regarding the medial side of the ankle, which of the following statements is correct?

A The anterior talo-fibular ligament strengthens the joint

B The deltoid ligament is continuous with the spring ligament

C The posterior tibial artery runs anterior to the malleolus

D The great saphenous vein runs posterior to the malleolus

Explanation B

The great saphenous runs anterior to the malleolus. The posterior tibial artery runs posterior to the malleolus and the anterior talo-fibular ligament (one of the three ligaments forming the lateral ligament of the ankle). The other two: posterior talofibular ligament and the calcaneofibular ligament) strengths the lateral side of the joint. The medial side is strengthened by the deltoid ligament.

Extra:

The joint capsule is strengthened medially by the strong deltoid ligament made up of 4 adjacent and continuous parts. It is continuous with the spring ligament.

Tibionavicular.

Tibiocalcaneal

Anterior and Posterior Tibiotalar.

Laterally 3 separate ligaments strengthen the joint:

Anterior talofibular ligament;

Posterior talofibular ligament;

Calcaneofibular ligament.

Some important structures pass POSTERIOR to medial malleolus under the flexor retinaculum: (ant to post) Tibial posterior; flexor digitorum longus tendon; post tibial artery; tibial Nerve; flexor hallucis longus tendon (Mnemonic: Tom, Dick and Nervous Harry or Tall Doctors Are Never Hungry).

Great saphenous vein runs ANTERIOR to medial malleolus.

**Question 22**

All of the following make up the lateral longitudinal arch except?

A lateral two metatarsals

B Calcaneus

C Cuboid

D Talus

Explanation D

The bones of the medial longtitudinal arch of the foot are calcaneus, talus, navicular, the three cuneiform bones and their three metatarsals. The pillars of the arch are the tuberosity of the calcaneus posteriorly and the heads of the three metatarsals anteriorly.

The lateral longitudinal arch is much flatter than the medial part of the arch and rests on the ground during standing. It is made up of the calcaneus, cuboid and the lateral two metatarsals

**Question 23**

In relation to the plantar aponeurosis, which of the following statements is correct?

A Covers the abductors of the big and little toe

B Is not attached to the skin of the sole

C Arises from the talus

D It forms the central compartment of the sole

Explanation D

The plantar aponeurosis (PA) is composed of dense collagen fibres. It forms the central compartment of the sole. It arises from the medial process of calcaneous and fans out over the sole. The PA becomes broader and thinner in front, and divides near the heads of the metatarsal bones into five processes, one for each toe. At the anterior end of the sole, inferior to the heads of the metatarsals, the aponeurosis is reinforced by transverse fibres forming the superficial transverse metatarsal ligament. In the mid and forefoot, vertical intermuscular septa extend deeply from the margins of the plantar aponeurosis toward the first and fifth metatarsals forming three compartments of the sole- the medial, lateral and central. Fibrous septa anchor the skin to the underlying aponeurosis and limit the mobility of the skin. The medial and lateral plantar nerves supply the muscles and skin of the sole of the foot. These two nerves are the terminal branches of the tibial nerve. The four muscle layers of the foot begin with the superficial or first layer beneath the PA. The abductors of the big and little toes are covered by a deep fascia that is much thinner than the central aponeurosis.

**Question 24**

The skin over the femoral triangle is supplied by which of the following nerves?

A Medial femoral cutaneous

B Ilio-inguinal

C Genito-femoral

D Obturator

Explanation C

Please note:

Last's= the genitofemoral nerve is the described nerve which supplies the skin of the femoral triangle.

CM= genitofemoral nerve, its femoral part supplies the skin over the lateral part of the femoral triangle and the genito part supplies the anterior scrotum or the labia majora. Ilioinguinal supplies the skin over the medial part of the femoral triangle

Web source= genitofemoral nerve supplies the skin over the femoral triangle

Latest recommended text (Moore, pg 537) has both ilio-inguinal and genito-femoral as supplying the skin over the femoral triangle. The former supplies the medial and the latter the lateral areas of femoral triangle.

**Question 25**

With respect to the great saphenous vein, which of the following is true?

A It pierces the cribriform fascia covering the saphenous opening

B It is a continuation of the lateral marginal vein of the foot

C It does not communicate directly with the superficial vein varicosities

D It runs between the two heads of gastrocnemius

Explanation A

The great saphenous vein is a continuation of the medial marginal vein of the foot. It does not run between the 2 heads of gastrocnemius, and does communicate directly with the superficial vein varicosities.

**Question 26**

All the following ligaments in the knee joint are extra-capsular except?

A Transverse ligament

B Patellar retinaculum

C Tibial collateral ligament

D Oblique popliteal ligament

Explanation A

Patella Ligament: From inferior border of patella to tibial tuberosity; is the continuation of quadriceps tendon.

Tibial collateral ligament: Broad flat band attached on medial epicondyle of femur (below adductor tubercle) - runs downward and forward to the medial condyle of the tibia - is crossed by the tendons of sartorius, gracilis and semitendinosus - attaches to meniscus.

Fibular collateral ligament: Round cord from lateral epicondyle of femur (above groove of popliteus), runs downward and backward to head of fibula - is primarily covered by the tendon of biceps femoris

Obliques popliteal ligament: Extension of semimembranosus - attached above the lateral condyle of femur - forms the floor of popliteal fossa and is in contact with popliteal artery.

Arcuate popliteal ligament: Y-shaped - from the posterior border of the intercondylar area of tibia and the lateral epicondyle of femur to the area below the head of fibula.

Transverse ligament - is an intra-capsular ligament. Slender fibrous band that joins anterior edges of menisci, crossing the anterior intercondylar area and tethering the menisci to each other during knee movement.

**Question 27**

Which of the following is not a branch of the common peroneal nerve?

A Recurrent genicular

B Superior genicular

C Medial sural cutaneous nerve

D Lateral cutaneous nerve of the calf

Explanation C

the common peroneal nerve gives off the following branches

The sural communicating nerve, lateral cutaneous nerve of the calf, superior and inferior genicular nerves and the recurrent genicular nerve. The common peroneal nerve ends by dividing, in the substance of peroneus longus, into the deep and superficial peroneal nerves

The medial sural cutaneous nerve is a branch of the tibial nervewhich joins the sural communicating branch of the common fibular (peroneal nerve)

**Question 28**

All of the following structures pass deep to the superior extensor retinaculum with the exception of?

A Peroneus tertius

B Deep peroneal nerve

C Extensor digitorum longus

D Superficial peroneal nerve

Explanation D

Deep to the superior extensor retinaculum lie the tendons of tibialis anterior, extensor hallucis longus, extensor digitorium longus and peroneus tertius, in that order from medial to lateral, in front of the lower end of the tibia. The anterior tibial artery and deep peroneal nerves are also deep to the retinaculum, lying between extensor hallucis longus and extensor digitorium longus, with the vessels medial to the nerve.

Extra:

Mnemonic (medial to lateral) Timothy Has A Very Nasty Disease, Fungal Toe. (Tibialis anterior tendon, extensor hallucis longus, tibial anterior Artery, tibial anterior Vein, deep fibular Nerve, extensor digitorium longus and peroneus tertius)

**Question 29**

In the lateral compartment of the leg, which of the following statements is correct?

A The peroneus longus arises only from the fibula

B The peroneal muscle tendons share the same tendon sheath as they pass the lateral malleolus

C The blood supply is the anterior tibial artery

D The muscles are supplied by the deep peroneal nerve

Explanation B

The muscles are supplied by the superficial peroneal nerve (L5, S1, S2). Peroneus longus arises from the fibula and the intermuscular septum (note: the intermuscular septa origin appears in other anatomy textbooks). Peroneus brevis from the inferior two thirds of the lateral surface of the fibula. There is no official blood supply to the lateral compartment of the leg. The peroneal muscles evert the foot and weakly plantarflexes the ankle. The lateral compartment ends inferiorly at the superior fibular retinaculum. Here the tendons of the two muscles enter a common synovial sheath to accommodate their passage between the superior fibular retinaculum and the lateral malleolus. Peroneus tertius is a muscle of the anterior compartment. It aids in dorsiflexion of the ankle and eversion of the foot.

The peroneal muscle tendons share the same tendon sheath from above the lateral malleolus to the peroneal trochlea. The peroneal trochlea is distal to the lateral malleolus

Peroneus is the same as fibulairs

**Question 30**

In relation to popliteus, which of the following statements is correct?

A It acts to lock the knee in full extension

B It arises from the tibia above the condyles

C It is innervated by a branch of the common peroneal nerve

D It has attachments to the lateral meniscus

Explanation D

Popliteus arises on the posterior surface of the tibia above the soleal line (below the tibia condyles). It slopes upwards and laterally and it acts to unlock the knee in full extension. It is innervated by the tibial nerve.

Origin: Lateral surface of lateral condyle of femur and lateral meniscus

Insertion: Posterior surface of tibia, superior to soleal line

Nerve: Tibial nerve (L4, L5, S1)

Action: Weakly flexes knee and unlocks it by rotating femur 5° on flexed tibia; medially rotates tibia of unplanted limb

**Question 31**

According to Hilton's law, the hip joint is supplied by the following nerves EXCEPT

A Femoral

B Gluteal

C Obturator

D Sciatic

Explanation D

Hilton’s law states that a nerve that innervates a joint also tends to innervate the muscles that move the joint and the skin covering the distal attachments of those muscles

In the current textbook: the hip joint is innervated by the femoral nerve (flexors + anterior aspect of hip joint), obturator nerve (lateral rotators + inferior aspect of hip joint), the nerve to quadratus femoris (posterior aspect of hip joint) and superior gluteal (adductors + superior aspect of the hip joint). There is no mention of the sciatic nerve

In other sources: The nerves supplying the hip joint are the femoral nerve, obturator nerve, nerve to quadratus femoris and twigs of the sciatic nerve

A difficult question, but important to be aware of

**Question 32**

Which of the following muscles of the lower leg can initiate dorsiflexion and inversion of the foot?

A Peroneus tertius

B Tibialis posterior

C Peroneus longus

D Tibialis anterior

Explanation D

Tibialis posterior causes inversion, peroneus tertius causes eversion and dorsiflexion, and peroneus longus gives rise to eversion.

**Question 33**

Regarding the femoral artery, which of the following statements is correct?

A It is found at the mid-inguinal point

B It is separated from the hip joint capsule by fat only

C It gives off the medial femoral cutaneous as its major branch

D It enters the adductor canal by piercing sartorius

Explanation A

The femoral artery is separated from the hip joint by psoas major. It enters the femoral triangle deep to sartorius. The profunda branch is its major offshoot

**Question 34**

Which of the following statements is correct in relation to gluteus maximus?

A It medially rotates and extends the hip

B It is the deepest of the gluteal muscles

C It forms the skin crease of the gluteal fold

D It is supplied by L5, S1 and S2

Explanation D

It is the most superficial of the gluteal muscles. It laterally rotates and extends the hip. It does not form the crease of the gluteal fold.

The fold of the buttock is the transverse skin crease for the hip joint and is not caused by the lower border of gluteus maximus, which crosses the line of the fold obliquely

The current text book says: The gluteal fold (sulcus) coincides with the inferior border of the gluteus maximus and indicates the separation of the buttock from the thigh. Coincides-but does not say form.

Web search: The gluteal sulcus (also known as the gluteal fold, fold of the buttock or horizontal gluteal crease) is an area of the body of humans described by a horizontal crease formed by the inferior aspect of the buttocks and the posterior upper thigh. The gluteal sulcus is formed by the posterior horizontal skin crease of the hip joint and overlying fat, and is not formed by the lower border of the gluteus maximus muscle, which crosses the fold obliquely

**Question 35**

In relation to the hip joint, which of the following statements is correct?

A It has the ischiofemoral as its strongest ligament

B It is limited in full extension by the pubofemoral ligament

C It derives stability largely from its articular surfaces

D The nerve supply is via the obturator and sciatic nerves only

Explanation C

The hip joint is limited in full extension by the iliofemoral ligament. . The ischiofemoral is the weakest ligament.

Note (in some sources): the hip joint is innervated by the femoral nerve (flexors + anterior aspect of hip joint), obturator nerve (lateral rotators + inferior aspect of hip joint), the nerve to quadratus femoris (posterior aspect of hip joint) and superior gluteal (adductors + superior aspect of the hip joint). There is no mention of the sciatic nerve

In other sources: The nerves supplying the hip joint are the femoral nerve, obturator nerve, nerve to quadratus femoris and twigs of the sciatic nerve

A difficult question, but important to be aware of

**Question 36**

In relation to the popliteal fossa, which of the following is correct?

A The popliteal vein lies between the popliteal artery and tibial nerve

B The sural nerve branches from the common peroneal nerve only

C The roof is formed by biceps femoris

D The infero-medial border is soleus muscle

Explanation A

The infero-medial border is formed by gastrocnemius. The roof is formed by fascia lata, and the sural nerve is a branch of the tibial nerve and the common peroneal nerve.

**Question 37**

Regarding tibialis anterior, which of the following statements is correct?

A It inserts into the medial cuneiform and the adjacent first metatarsal bone

B It platarflexes and everts the foot

C It shares its site of insertion with peroneus tertius

D It arises from the upper two thirds of the fibula

Explanation A

Tibialis anterior dorsiflexes and inverts the foot. It arises from the upper 2/3 of the tibia. It does not share its site of origin with peroneus tertius (PT or fibularis tertius). PT inserts into the dorsum of base of the 5th metatarsal. PT shares a sheath with extensor digitorium longus (EDL)

**Question 38**

Under the extensor retinaculum, which is the most lateral structure?

A Extensor halucis longus

B The sural nerve

C Peroneus tertius

D The anterior tibial artery

Explanation C

Deep to the superior extensor retinaculum lie the tendons of tibialis anterior, extensor hallucis longus, extensor digitorium longus and peroneus tertius, in that order from medial to lateral, in front of the lower end of the tibia. The anterior tibial and deep peroneal nerve are also deep to the retinaculum, lying between extensor hallucis longus and extensor digitorium longus, with the vessels medial to the nerve

A good mnemonic to remember the structures behind the superior extensor retinaculum (from medial to lateral) is: "Timothy Has A Very Nasty Disease, Paratyphoid." - T = Tibialis anterior - H = extensor Hallucis longus - A = Artery - V = Vein - N = Nerve - D = extensor Digitorum longus - PT = Peroneus tertius

**Question 39**

With regard to cutaneous innervation of the lower limb, which of the following statements is correct?

A The sural nerve supplies the medial malleolus

B The medial plantar nerve supplies a greater area than the lateral

C The superficial peroneal nerve supplies the 1st inter-digital cleft

D The deep peroneal nerve supplies the 3rd digital cleft

Explanation B

The sural nerve supplies the extensors on the lateral side of the foot and little toe. The deep proneal nerve supplies the first inter-digital cleft. The superficial peroneal nerve supplies the third inter-digital cleft

**Question 40**

Which dermatome usually supplies the great toe?

A L5

B L3

C L4

D S1

Explanation A

L3= anterior and medial thigh and knee

L4= medial leg, medial ankle and side of foot

L5= lateral leg, dorsum of foot, medial sole, 1-3 toes

S1= lateral ankle, lateral side of dorsum and sole of foot, 4-5 toes

S2= Posterior leg, posterior thigh, buttocks and penis

**Question 41**

In relation to Hiltons law, which nerve does not supply the hip joint?

A Inferior gluteal

B Femoral

C Obturator

D Nerve to quadratus femoris

Explanation A

Hilton’s law;

A nerve that innervates a joint also tends to innervate the muscles that move the joint and the skin that covers the distal attachments of those muscles

Nerves supplying the hip joint are the femoral nerve, obturator nerve, nerve to quadratus femoris and the superior gluteal nerve.

Note: some older texts report that there are articular twigs from the sciatic nerve which supply the hip joint

Interestingly, in the current textbook, the movement of the hip joint encompasses: flexors, adductors, lateral rotators, extensors, abductors and medial rotators. Lateral rotators include gluteus maximus. This muscle is supplied by the inferior gluteal nerve. This nerve however, is not part of the nerves supplying the hip joint which seems in contrary to Hilton's law. I have asked a few anatomists and the general response is that the law holds true but with some exceptions. See the next quote and source- "one OFTEN finds that a nerve that innervates a joint also tends to innervate the muscles that move the joint and the skin that covers the distal attachments of those muscles". I-Hilton, J. (1863). However, Hilton's law is actually an axiom, not a law. In general, axioms are generally true and therefore not always law. In his 13 lectures he further expounds on this. It is an AXIOM, not a dictum. A dictum creates a LAW (truth).

**Question 42**

Which ligament of the knee forms part of the capsule?

A Posterior cruciate

B Medial collateral

C Popliteus tendon

D Anterior cruciate

Explanation B

The medial collateral ligament of the knee (also called the tibial collateral ligament), has its posterior apex of the triangular ligament blended with the capsule of the knee and attaches to the medial meniscus.

**Question 43**

In relation to the lateral compartment of the leg, which of the following statements is correct?

A Peroneus longus lies in the groove on the posterior ridge of the cuboid bone

B Contains peroneus longus, brevis and tertius

C Peroneus brevis passes above the peroneal trochlea to be inserted into the tubercle at the base of the 5th metatarsal

D Contains the deep peroneal nerve and the superficial peroneal nerve

Explanation C

Peroneus tertius and the deep peroneal nerve lies in the anterior compartment of the leg. Peroneus longus passes through the inferior compartment - inferior to the fibular trochlea on the calcaneus - and enters a groove on the anterior inferior aspect of the cuboid bone

Extra:

The muscles are supplied by the superficial peroneal nerv e (L5, S1, S2). Peroneus longus arises from the fibula and the intermuscular septum and peroneus brevis from the inferior two thirds of the lateral surface of the fibula. There is no official blood supply to the lateral compartment of the leg. The peroneal muscles evert the foot and weakly plantarflexes the ankle. The lateral compartment ends inferiorly at the superior fibular retinaculum. Here the tendons of the two muscles enter a common synovial sheath to accommodate their passage between the superior fibular retinaculum and the lateral malleolus. Peroneus tertius is a muscle of the anterior compartment. It aids in dorsiflexion of the ankle and eversion of the foot.

Peroneus is the same as fibulairs

Note: Peroneus=Fibularis

**Question 44**

The deep peroneal nerve travels through the lower leg with which artery?

A Deep peroneal

B Posterior tibial

C Anterior tibial

D Common peroneal

Explanation C

The deep peroneal nerve reaches the anterior tibial artery from the lateral side, runs in front of it in the crowded space of the middle of the leg and returns to its lateral side below. The anterior tibial artery is accompanied by 2 anterior tibial veins running on either side.

**Question 45**

Injury to the common fibular nerve is associated with all the following EXCEPT?

A Foot drop

B Sensory loss over dorsum of the foot

C Fibular fracture

D Eversion of the foot

Explanation A

The common fibular nerve in the nerve most often injured in the lower limb due to its superficial position. It winds around the fibular neck making it very vulnerable to trauma. The nerve may be injured during fracture of the fibular neck or severely stretched when the knee joint is dislocated or fractured. Injury results in flaccid paralysis of all the muscles in the anterior and lateral compartment of the lower limb (dorsiflexion and evertors of the foot). The loss of dorsiflexion causes foot drop. This is further exacerbated by the unopposed inversion of the foot, causing a high stepping gait to avoid the toes hitting the ground during the swing phase of walking. Sensory loss extends over the lower lateral part of the leg and the dorsum of the foot.

**Question 46**

Injury to L5 will cause the following clinical signs

A Numbness along the medial border of the leg

B Inability to dorsiflex the big toe

C Eversion of the foot only

D Loss of lateral rotation of the hip

Explanation B

L5- dermatome involves the lateral part of the leg, dorsum of the foot and the medial sole. L5 is involved in hip extension, knee flexion, foot eversion (and inversion according to CM) and big toe dorsiflexion. The lateral rotators of the hip consists of the externus and internus obturator muscles, piriformis, superior and inferior gemelli and quadratus femoris.

Obturator externus: obturator nerve (L3, L4)

Obturator internus: nerve to obturator internus (L5 S1)

Piriformis: Branch of anterior rami (S1, S2)

Superior gemelli: nerve to obturator internus (L5 S1)

Inferior gemelli: nerve to quadratus femoris (L5, S1)

Quadratus femoris: nerve to quadratus femoris (L5, S1)

Note: Bold denotes the main segmental innervation. (Therefore lateral rotation will not be lost completely). I feel that "Inability to dorsiflex the big toe" is the most correct answer. Also, the old textbook displays L5 as foot eversion only and L4 foot inversion. The current textbook reads that L5 does both inversion and eversion of the foot.

**Question 47**

Regarding the sacroiliac joint, which is true?

A The SI joint does not allow any movment

B Both bones are covered by articular cartilage at the joint surface

C They are saddle joints

D The joint surfaces are smooth

Explanation B

The sacroiliac joints are strong weight baring compound joints, consisting of a anterior synovial joint (between the articular surfaces of the sacrum and ilium, covered by articular cartilage) and a posterior syndesmosis (between the tuberosities of the same bones). The articular surfaces have irregular but congruent elevations and depressions that interlock. The SI joint differs form other synovial joint as it limited mobility is allowed, a consequence of their role in transmitting the weight of most of the body to the hip bones. The sacroiliac joints like all spinal joints (except the atlanto-axial) are bicondylar joints, meaning that movement of one side corresponds to a correlative movement of the other side.

**Question 48**

Which is incorrect about the plantar aponeurosis?

A Is found in the second layer of the foot

B Is attached firmly to the skin

C Is supplied by the tibial nerve

D Arises from the calcaneous

Explanation A

The plantar aponeurosis (PA) is composed of dense collagen fibres. It forms the central compartment of the sole. It arises from the medial process of calcaneous and fans out over the sole. The PA becomes broader and thinner in front, and divides near the heads of the metatarsal bones into five processes, one for each toe. At the anterior end of the sole, inferior to the heads of the metatarsals, the aponeurosis is reinforced by transverse fibres forming the superficial transverse metatarsal ligament. In the mid and forefoot, vertical intermuscular septa extend deeply from the margins of the plantar aponeurosis toward the first and fifth metatarsals forming three compartments of the sole- the medial, lateral and central. Fibrous septa anchor the skin to the underlying aponeurosis and limit the mobility of the skin. The medial and lateral plantar nerves supply the muscles and skin of the sole of the foot. These two nerves are the terminal branches of the tibial nerve. The four muscle layers of the foot begin with the superficial or first layer beneath the PA. The abductors of the big and little toes are covered by a deep fascia that is much thinner than the central aponeurosis.

**Question 49**

Which is true regarding the cruciate ligaments of the knee?

A The posterior cruciate helps prevent posterior displacement of the femur on the tibia

B The anterior cruciate ligament prevents hyperextension of the knee

C The posterior cruciate attaches to the posterior part of the lateral surface of the medial condyle of the femur

D The anterior cruciate is stronger than the posterior cruciate ligament

Explanation B

The anterior cruciate ligament (ACL) is the weaker of the two ligaments. It arises from the anterior intercondylar area of the tibia, posterior to the attachment of the medial meniscus. It extends superiorly, posteriorly and laterally to attach to the posterior part of the medial side of the lateral condyle of the femur. It limits posterior rolling of the femoral condyles on the tibial plateau during flexion and it prevents hyperextension of the knee joint and posterior displacement of the femur on the tibia. It has a relatively poor blood supply. The posterior cruciate ligament (PCL)- stronger of the two ligaments, arises form the posterior intercondylar area of the tibia and extends superiorly and anteriorly on the medial side of the ACL to attach to the anterior part of the lateral surface of the medial condyle of the femur. The PCL limits anterior rolling of the femur on the tibial plateau during extension. It helps prevent hyperflexion of the knee joint and prevents anterior displacement of the femur on the tibia or posterior displacment of the tibia on the femur. The PCL is the main stabilizing factor for the femur when in the weight bearing flexed knee

**Question 50**

Which is TRUE regarding the extracapsular ligaments of the knee?

A The tibial collateral is stronger than the fibular collateral ligament

B The arcuate popliteal ligament arises from the posterior aspect of the tibia

C The extracapsular ligaments of the knee comprise of 4 ligaments

D The patellar ligament receives the medial and lateral retinacula

Explanation D

The extracapsular ligaments of the knee comprise the 1-patellar ligament, 2-fibular collateral ligament, 3-tibial collateral ligament, 4-oblique popliteal ligament and the 5-arcuate popliteal ligament.

PL: it is the anterior ligament of the knee. It is the distal part of the quadriceps tendon. Laterally it receives the medial and lateral retinacula. The PL inserts into the tibial tuberosity

FCL: a cord like ligament extending inferiorly form the lateral epicondyle of the femur to the lateral surface of the fibular head. The tendon of biceps femoris is split in two by this ligament

TCL: flat, intrinsic band that extends from the medial epicondyle of the femur to the medial condyle and superior part of the medial surface of the tibia. TCL is weaker than the FCL and is more damaged

OPL: arises posterior to the medial tibial condyle and passes superolaterally toward the lateral femoral condyle, blending with the central part of the posterior aspect of the joint capsule.

APL: arises from the posterior aspect of the fibular head, passes superomedially over the tendon of popliteus and spreads of the posterior surface of the knee joint

**Question 51**

Clinical features found following a fibular neck fracture/injury include the following EXCEPT?

A Weakness of the muscles of the anterior and lateral compartment of the leg

B Inability to dorsiflex the foot

C Loss of sensation of the dorsum of the foot with sparing of the first web space

D Inability to evert the foot

Explanation C

Clinical features found following a fibular neck fracture/injury include the following:

Inability to dorsiflex ankle- foot drop, Inability to evert foot- you get unopposed inversion, weakness of the muscles of the anterior and lateral compartment-flaccid paralysis. Loss of sensation over the dorsum of the foot and the anterolateral aspect of the leg-the common fibular nerve-superficial branch innervates the web spaces 2, 3, 4 and the deep branch innervates the 1 web space

Three compensatory actions occur: a waddling gait (lean to the opposite side-hiking the hip up), a swing out gait and a high stepping (steppage) gait (to ensure that the toes clear the ground)

**Question 52**

Which is INCORRECT regarding the sciatic nerve?

A The sciatic nerve is the most lateral nerve entering the greater sciatic foramen

B The sciatic nerve receives the sciatic artery, a branch of the superior gluteal artery

C The sciatic nerve is the largest nerve in the body

D The sciatic nerve runs inferolateraly under the gluteus maximus muscle

Explanation B

The sciatic nerve is the largest nerve in the body. It is a continuation of the sacral plexus. The sciatic nerve is the most lateral nerve entering the greater sciatic foramen inferior to the piriformis. Medial to it are the inferior gluteal nerve and vessels, the internal pudendal vessels and the pudendal nerve. The sciatic nerve runs inferolaterally under the gluteus maximus muscle, midway between the greater trochanter and the ischial tuberosity. The nerve rests on the ischium and then passes posterior to the obturator internus, quadratus femoris and the adductor muscles. Due to its size, the sciatic nerve receives the sciatic artery, a branch of the inferior gluteal artery. It supplies no structures in the gluteal region. It supplies the posterior thigh muscles, all leg and foot muscles, and the skin of most of the leg and foot. All the articular branches to the joints are supplied by the sciatic nerve.

**Question 53**

Which is true of the biceps femoral muscle?

A The long head of biceps femoris is innervated by the tibial division of the sciatic nerve

B The main blood supply is form the inferior gluteal artery

C The hamstring's proximal attachment is from the body of ischium

D Biceps femoris's two head together with the semitendinosus and semimembranosus muscle form the hamstrings

Explanation A

The biceps femoral (BF) muscle consists of two heads- a long and short head. The long head together with the semitendinosus and semimembranosus muscle form the hamstring muscles. The hamstring muscles have a common nerve supply- the tibial division of the sciatic nerve, The short head of biceps is innervated by the fibular division of the sciatic nerve. The main blood supply is form the perforating branches of the profunda femoris artery. The upper part of the hamstrings are supplied by the inferior gluteal artery and the popliteal artery. The main action of the BF is flexion of the leg, lateral rotation of leg when the knee is flexed and extension of the thigh (e.g. when starting to walk). The hamstring muscle's proximal attachment arises form the ischial tuberosity

**Question 54**

Which myotome causes big toe abduction?

A L5

B S2

C L4

D L3

Explanation B

NOTE:

I am not sure of the answer. But it seems the closest

abductor hallucis is innervated by S2 S3 (medial plantar nerve) this muscle abducts and flexes great toe. So, I think the more appropriate answer should be S2.

Other thoughts: MTP and phalangeal dorsiflexion and plantarflexion Great toe used as example in diagram. L5S1 dorsiflexion; S1S2 plantarflexion The terms abduction and adduction of the toes are used with reference to an axis through the second toe. Thus, abduction of the big toe is a medial movement, away from the second toe as which occurs in dorsiflexion. Therefore L5,S1.

**Question 55**

Which is FALSE regarding the course of the sciatic nerve?

A It descends in posterior thigh deep to biceps femoris

B The sciatic nerve is the most medial nerve entering the greater sciatic foramen

C The nerve rests on the ischium and then passes posterior to the obturator internus, quadratus femoris and the adductor muscles

D The sciatic nerve runs inferolaterally under the gluteus maximus muscle, midway between the greater trochanter and the ischial tuberosity

Explanation B

The sciatic nerve is the largest nerve in the body. It is a continuation of the sacral plexus. The sciatic nerve is the most lateral nerve entering the greater sciatic foramen inferior to the piriformis. Medial to it are the inferior gluteal nerve and vessels, the internal pudendal vessels and the pudendal nerve. The sciatic nerve runs inferolaterally under the gluteus maximus muscle, midway between the greater trochanter and the ischial tuberosity. The nerve rests on the ischium and then passes posterior to the obturator internus, quadratus femoris and the adductor muscles. It descends in the posterior thigh deep to biceps femoris, bifuricates into tibial and common fibular nerves at the apex of popliteal fossa. Due to its size, the sciatic nerve receives the sciatic artery, a branch of the inferior gluteal artery. It supplies no structures in the gluteal region. It supplies the posterior thigh muscles, all leg and foot muscles, and the skin of most of the leg and foot. All the articular branches to the joints are supplied by the sciatic nerve.

**Question 56**

What is true of the biceps femoris muscle?

A Receives dual supply from tibia (long head) and common fibular (short head) part of sciatic nerve.

B It is involved in flexion of the knee and hip joint

C Arterial supply is provided by the femoral artery

D Distally the single tendon of biceps femoris muscle inserts into the upper end of the tibia

Explanation A

The biceps femoris muscle has two heads of origin. Long head-arises from the ischial tuberosity in common with semitendinosus. Short head-has a long origin, from the whole length of the linea aspera and the upper part of the lateral supracondylar line of the femur. Note: the short head origin in the old prescribed TB says the whole length of the linea aspera and the upper part of the lateral supracondylar line of the femur. In the current TB it arises from the lateral lip of the inferior third of the linea aspera and supracondylar ridge of the femur. Distally the single tendon of biceps femoris muscle inserts into the head of the fibula

Biceps femoris receives dual supply from tibia (long head) and common fibular (short head) part of sciatic nerve.

The blood supply comes from the profunda femoris and its perforating branches

Actions: The hamstrings (thus including semimembranosus and semitendinosus) flex the knee joint and extend the hip joint. In the semiflexed knee the biceps femoris laterally rotates the knee and the semimembranosus and semitendinosus medially rotate it

**Question 57**

Which is CORRECT regarding the anatomy of the ankle joint?

A The tibia and fibula have single articulations with the talus

B The lateral ligament reinforcing the ankle is a single ligament made up of three parts

C The tibia flares outwards at both ends to provide an increased area for articulation and weight transfer.

D The ankle is the most unstable in the dorsiflexion position

Explanation C

The distal ends of the tibia and fibular form a malleolar mortise into which the pulley shaped trochlea of the talus fits. The joint formed is a hinge type synovial joint. The medial surface of the lateral malleolus articulates with the lateral surface of the talus. The tibia articulates with the talus in two places. The tibia's inferior surface forms the roof of the malleolar mortise and the tibia's medial malleolus articulates with the medial surface of the talus. The tibia flares outwards at both ends to provide an increased area for articulation and weight transfer. The ankle joint is quite unstable during plantarflexion because the trochlear is narrower posteriorly and, therefore lies loosely within the mortise. It is during plantar flexion that most ankle injures occur. The ankle is reinforced by the lateral ligament of the ankle-made of three separate ligament (anterior talofibular ligament, posterior talofibular ligament and calcaneofibular ligament) and medially by the medial ligament of the ankle (deltoid ligament)-made of four parts (tibionavicular part, tibiocalcaneal part, anterior and posterior tibiotalar parts)

**Question 58**

Regarding the perforating veins of the lower limb, which is CORRECT?

A They pierce the superficial and deep fascia of the lower limb

B They do not add to the musculovenous pump of the lower limb

C They ensure bloods flows from the superficial to the deep veins only

D They do not contain valves

Explanation C

The perforating veins penetrate the deep fascia and contain valves that allow blood to flow only from the superficial veins to the deep veins. They pass through the deep fascia at an oblique angle so that when muscles contract and the pressure increases inside the deep fascia, the perforating veins are compressed. Compression of the perforating veins also prevents blood from flowing from the deep to the superficial veins. This pattern of blood flow, from superficial to deep, is important for complete and proper venous retrun from the lower limb because it enables muscular contractions to propel blood towards the heart against the pull of gravity

**Question 59**

Which of the following muscles is the main flexor of the thigh?

A Quadriceps femoris

B Pectineus

C Iliacus

D Iliopsoas

Explanation D

Iliopsoas is the chief flexor of the thigh. It is the most powerful of the hip flexors with the longest range. Of the thigh flexors, it is the only muscle attached to the vertebral column, pelvis and femur. It is able to produce stability as well as movement.

The flexors of the hip joint: pectineus, iliopsoas, psoas minor, iliacus and sartorius

Note:

The iliopsoas refers to the joined psoas and the iliacus muscles. The two muscles are separate in the abdomen, but usually merge in the thigh. As such, they are usually given the common name iliopsoas. The iliopsoas muscle joins to the femur at the lesser trochanter, and acts as the strongest flexor of the hip.

Clinical orientated anatomy refers to the muscle as one: iliopsoas- its broad lateral part (iliacus), and its long medial part (psoas major) arise from the iliac fossa and lumbar vertebrae respectively. Thus it is the only muscle attached to the vertebral column, pelvis and femur

**Question 60**

What is the main nerve of the lateral compartment of the leg?

A Superficial fibular nerve

B Lateral fibular nerve

C Common fibular nerve

D Deep fibular nerve

Explanation A

Superficial fibular nerve. It is a terminal branch of the common fibular nerve.

**Question 61**

What is the function(s) of the lumbricals of the foot?

A Flexion of the lateral four toes

B Extension of middle and distal interphalangeal joints of the lateral four toes

C Adduct digits and flex metatarsophalangeal joints

D Adduction of the lateral four toes

Explanation B

They are found in the second layer of the foot. They perform the following functions: flex proximal phalanges, extend middle and distal phalanges of the lateral four digits (toes)

Flexion of the lateral four toes=flexor digitorium brevis

Abduct digits (2-4) and flex metatarsophalangeal joints (MTPJs)=dorsal interossei

Adduct digits (3-5) and flex MTPJs= plantar interossei

**Question 62**

Which muscles is not supplied by the tibial component of the sciatic nerve?

A The hamstring part of adductor magnus

B Short head of biceps femoris

C Semitendinosus

D Semimembranosus

Explanation B

The tibial division of the sciatic nerve does not supply the short head of bicep femoris, but rather the long head. The common fibular division of the sciatic nerve supplies the short head of biceps femoris

Adductor magnus is the largest, most powerful, and most posterior muscle in the adductor group. It has an adductor part and a hamstring part. The adductor part is supplied by the obturator nerve and the hamstring part by the tibial component of the sciatic nerve

**Question 63**

Which nerve root would be affected if there was numbness to the anterior lower leg and medial three toes?

A L4

B S1

C L3

D L5

Explanation D

Looking at the dermatomal distribution of the lower limb in the prescribed textbook. Dermatome L5 would be responsible.

**Question 64**

Which of the folllowing is FALSE regarding femoral hernias?

A A femoral hernia appears as a mass in the femoral triangle, inferolateral to the pubic tubercle

B Femoral hernias are small and do not enlarge as they are contained within the wall of the femoral canal

C Femoral hernias are more common in females because of their wider pelvises.

D The A femoral hernia is bounded by the femoral vein laterally and the lacunar ligament medially

Explanation B

The femoral ring is a weak area in the anterior abdominal wall and is the usual site of the origin of a femoral hernia-a protrusion of abdominal viscera (often a loop of small intestine) through the femoral ring into the femoral canal. A femoral hernia appears as a mass, often tender, in the femoral triangle, inferolateral to the pubic tubercle. The hernia is bounded by the femoral vein laterally and the lacunar ligament medially. The hernia sac (although initially small and contained within the wall of the canal) can enlarge by passing inferiorly through the saphenous opening into the subcutaneous tissues of the thigh. Femoral hernias are more common in females because of their wider pelvises.

**Question 65**

Which is true regarding venous drainage of the lower limb?

A The deep veins lie in the deep fascia

B The deep veins are contained within a vascular sheath with the artery, whose pulsations also help compress and move blood in the veins.

C The superficial veins have more valves than the deep veins

D Passage of flow in the deep veins of the lower limbs is: from the the deep veins to the popliteal vein to the femoral vein to the internal iliac vein

Explanation B

The superficial veins are located in the subcutaneous tissue and the deep veins are located beneath (deep) to the deep fascia and accompany all major arteries. Superficial and deep veins have valves, which are more numerous in the deep veins. The two major superficial veins in the lower limb are the great and small saphenous veins. Perforating veins penetrate the deep fascia close to their origin from the superficial veins and contain valves that allow blood to flow only form the superficial veins to the deep ones. The deep veins are contained within a vascular sheath with the artery, whose pulsations also help compress and move blood in the veins. The anterior tibial vein (anterior leg) and the posterior tibial and fibular veins (formed by the medial and lateral plantar veins of the foot) are all deep veins. The three deep veins drain into the popliteal vein which becomes the femoral vein in the thigh. The femoral vein passes deep to the inguinal ligament to become the external iliac vein

**Question 66**

A patient suffers a fracture of the femoral neck. Which of the following features of the fractures are false?

A Most of the blood supply to the head and neck of the femur is via the medial circumflex femoral artery

B Aseptic vascular necrosis of the femoral head is a common complication of a neck of femur fracture

C Fractures of the femoral neck results in medial rotation of the lower limb

D Femoral neck fractures (NOF) are common in people >60yrs old,

Explanation C

Femoral neck fractures (NOF) are common in people >60yrs old, and more common in women (because they have weaker and more brittle bones at this age due to osteoporosis). Fractures of the femoral neck are often intracapsular. NOF fractures result in lateral rotation of the lower limb. Most of the blood supply to the head and neck of the femur is via the medial circumflex femoral artery and is disrupted by a NOF fracture. Following a NOF fracture, the artery to the ligament of the femoral head may be the only remaining artery which is often inadequate resulting in aseptic avascular necrosis of the femoral head

**Question 67**

Which is true of the dorsalis pedis artery?

A The dorsalis pedis is a branch of the posterior tibial artery

B The dorsalis pedis forms part of (contributes to) the deep plantar arch

C The dorsali pedis artery runs superficial to the extensor retinaculum on the dorsum of the foot

D It begins above the malleoli and runs between extensor hallucis longus and extensor digitorium longus tendons on the dorsum of the foot

Explanation B

The dorsalis pedis (DP) artery is a major source of blood supply to the forefoot. The DP is a direct continuation of the anterior tibial artery. The DP begins midway between the malleoli and runs anteromedially, deep to the inferior extensor retinaculum between the extensor halluces longus and the extensor digitorum longus tendons on the dorsum of the foot.

The DP passes to the first interosseous space, where it divides into the first metatarsal artery and a deep planter artery. The deep plantar artery joins the lateral plantar artery to form the DEEP PLANTAR ARCH.

**Question 68**

Which of the following factors is the most important in stabilizing the patella?

A The lowest fibres of the vastus medialis

B The pull of the of the quadriceps muscles

C The forward prominence of the lateral femoral condyle

D The ligamentous tension of the medial patella retinaculum

Explanation A

The patella is a sesamoid bone in the quadriceps tendon. The patellar ligament is vertical, but the pull of the of the quadriceps is oblique, in the line of the shaft of the femur, and when the muscle contracts it tends to draw the patella laterally.

Factors preventing lateral dislocation include: the forward prominence of the lateral femoral condyle, the ligamentous tension of the medial patella retinaculum and the lowest fibres of the vastus medialis. These fibres hold the patella medially when the quadriceps contracts and are indispensable to the stability of the patella

**Question 69**

Following an urgent saphenous vein cut down, a patient complains of numbness to the medial border of the foot. Which of the following nerves has been compromised?

A Saphenous nerve

B Tibial nerve

C Medial plantar nerve

D Sural nerve

Explanation A

The saphenous nerve accompanies the great saphenous vein anterior to the medial malleolus. It can be damaged during a venous cut down or by a ligature following closing of a surgical wound

**Question 70**

Which of the knee bursae is the most likely to lead to a septic arthritis?

A Anserine

B Suprapatellar

C Popliteus

D Gastrocnemius

Explanation B

There are about 12 bursa around the knee joint

Four bursae communicate with the synovial cavity of the knee joint.

Suprapatellar, popliteus, anserine and gastrocnemius bursa.

The large suprapatellar bursa is the most likely to lead to a septic joint infection. Although it develops separately for the knee joint, the bursa becomes continuous with it.