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Section = A

Assignment = Anatomy

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(1)  
Q No 1 Write down a comprehensive note on blood supply and venous return of lower limb?

The arterial supply of the lower limb originates from the external iliac artery.

The common femoral artery is the direct continuation of the external iliac artery, beginning at the level of the inguinal ligament. The common femoral artery becomes the superficial femoral artery at the point where it gives off the profunda femoris.

The popliteal artery is the direct continuation of the SFA in the adductor canal. The popliteal artery terminates into the anterior tibial artery and the tibioperoneal trunk.

The anterior tibial artery passes through the interosseous membrane to reach the

anterior compartment of the leg. It continues to the dorsum of the foot as the anterior tibial artery passes through the interosseous membrane to reach the anterior compartment of the leg. It continues to the dorsum of the foot as the dorsalis pedis artery. The tibioperoneal trunk divides into the posterior tibial and peroneal arteries.

The posterior tibial artery passes downwards and behind the medial malleolus, it divides into medial and lateral plantar arteries.

# Venous return of lower limb.

The deep venous drainage system of the lower limb is located beneath the deep fascia of the lower limb. As a general rule, the deep veins accompany and share.

The gluteal region is drained by inferior and superior gluteal veins. These empty into the internal iliac vein.

the leg posteriorly to the medial malleolus.

On the posterior surface of the knee, the anterior tibial, posterior tibial and fibular veins unite to form the popliteal vein. The popliteal vein enters the thigh via the adductor canal.

## The Thigh

Once the popliteal vein has

entered the thigh, it is known as the femoral vein. It is situated anteriorly, accompanying the femoral artery.

The deep vein of the thigh (profunda femoris vein) is the other main venous structure in the thigh. Via perforating veins, it drains blood from the thigh muscles. It then empties into the distal section of the femoral vein.

The femoral vein leaves the thigh by running underneath the inguinal ligament, at which point is known as the external iliac vein.

## The Gluteal Region.

The gluteal region is drained by inferior and superior gluteal veins. These empty into the internal iliac vein.

# The Foot and leg:

The main venous structure of the foot is the dorsal venous arch, which mostly drains into the superficial veins, some veins from the arch penetrate deep into the leg, forming the anterior tibial vein.

On the plantar aspect of the foot, medial and lateral plantar veins arise. These veins combine to form the posterior tibial and fibular veins. The posterior tibial vein accompanies the posterior tibial artery, entering the leg posteriorly to the medial malleolus.

On the posterior surface of the knee, the anterior tibial, posterior tibial and fibular veins unite to form the popliteal vein. The popliteal vein enters the thigh via the adductor canal.

Q2: Describe the anatomical course of femoral nerve with the help of diagram?

Ans: Anatomical course of femoral nerve;

The femoral nerve is the largest branch of the lumbar plexus. It is derived from the anterior rami of nerve roots L2, L3 and L4.

After arising from the lumbar plexus, the femoral nerve travels inferiorly through the major muscles of the posterior abdominal wall. It supplies branches to the iliacus and pectineus muscles prior to entering the thigh.

The femoral nerve then passes underneath the inguinal ligament to enter the femoral triangle. Within this triangle, the nerve is located lateral to the femoral vessels (unlike the nerve).

The femoral artery and vein are enclosed within the femoral sheath).

Approximately 4cm below the inguinal ligament, the femoral nerve divides into anterior and posterior division.

The femoral nerve is one of the major peripheral nerves of the lower limb.

In this article, we shall look at the anatomy of the femoral nerve - its anatomical course, function, and clinical correlations.

- **Nerve roots:** L2-L4

- **Motor functions:**

Innervates the anterior thigh muscles that flex the hip joint (pectineus, iliacus, sartorius) and extend the knee (quadriceps femoris, vastus medialis, vastus lateralis, vastus intermedius).



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## Sensory functions:

Supplies cutaneous branches to the anteromedial thigh (anterior cutaneous branches of the femoral nerve) and the medial side of the leg and foot (saphenous nerve).

# Anatomical course of Sciatic nerve. (19)

The Sciatic nerve is derived from the lumbosacral plexus. After its formation, it leaves the pelvis and enters the gluteal region via greater sciatic foramen. It emerges inferiorly to the piriformis muscle and descends in an inferolateral direction.

As the nerve moves through the gluteal region, it crosses the posterior surface of the superior gemellus, obturator internus, inferior gemellus and quadratus femoris muscles. It then enters the posterior thigh by passing deep to the long head of the biceps femoris.

Within the posterior thigh, the nerve gives rise to branches to the hamstring muscles and adductor magnus.

~~with~~ when the sciatic nerve reaches the popliteal fossa, it bifurcates into the common fibular and tibial nerves.

## • Nerve roots:

L<sub>4</sub> - S<sub>3</sub>

## MOTOR Functions:

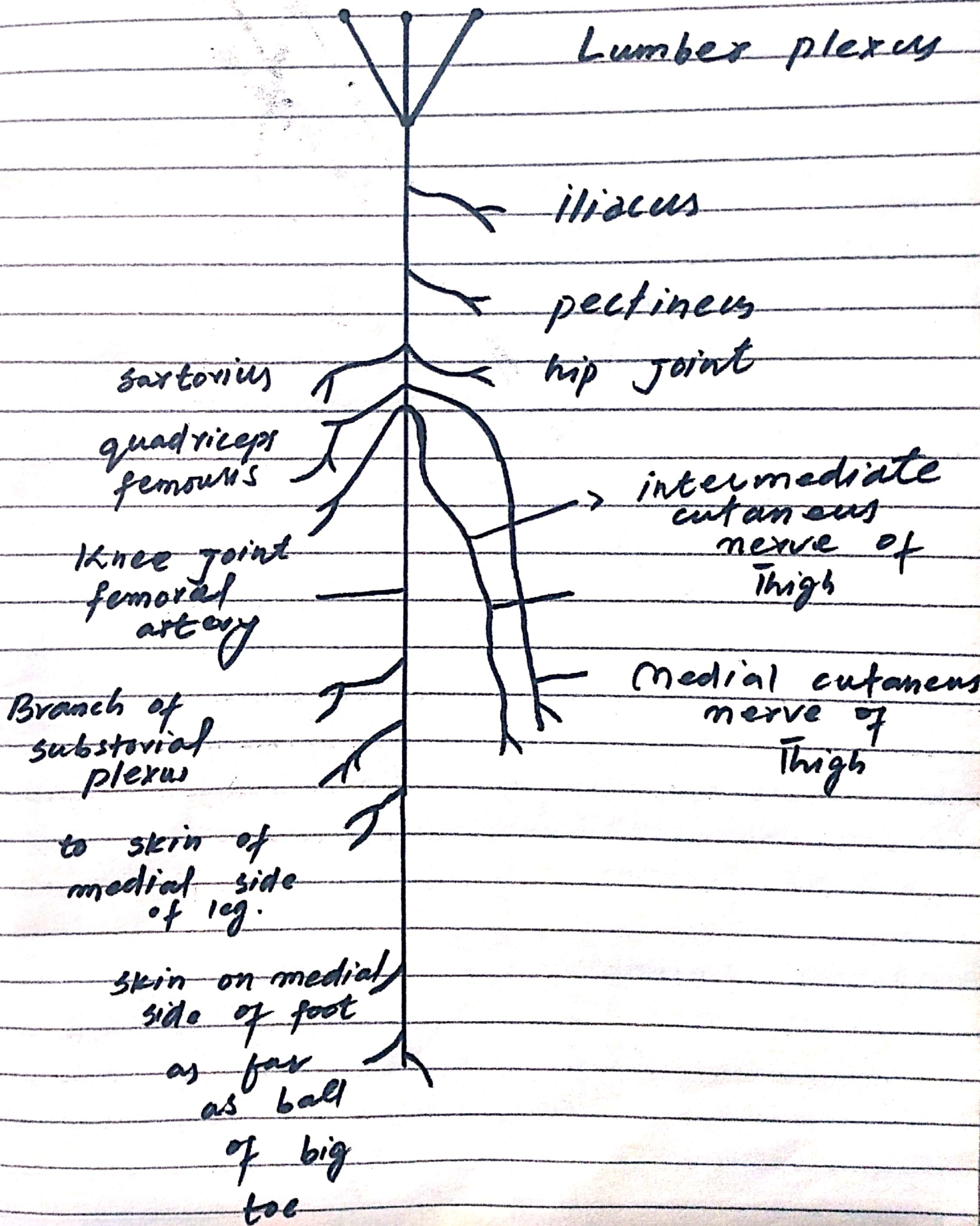
- Innervates the muscles of the posterior thigh (biceps femoris, semimembranosus and semitendinosus) and the hamstring portion of the adductor magnus (remaining portion of which is supplied by the obturator nerve).
- Indirectly innervates (via its terminal branches) all the muscles of the leg and foot.

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## Sensory functions:

no direct sensory functions.  
Indirectly innervates (via its  
terminal branches) the skin  
of the lateral leg, heel, and  
both the dorsal and plantar  
surfaces of the foot.

# ( femoral nerve )



# (Sciatic Nerve)

