

**VIVAs lower limb nerves/arteries/veins**

TOPIC: Femoral Nerve \_\_\_\_\_ NUMBER: 2.5 \_\_\_\_\_

<b>OPENING QUESTION</b>	What are the borders & contents of the femoral sheath?	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1 Boundaries: Sartorius, Adductor Longus, Inguinal ligaments	
	2 Floor: Iliacus, Psoas, Pectineus, Adductor Brevis	
	3 Contents: Femoral Nerve, Artery, Veins	
<b>PROMPTS</b>		
<b>SECOND QUESTION (if needed)</b>	What are the branches of the femoral nerve?	
<b>POINTS REQUIRED</b>	1 Nerve to sartorius	
	2 Medial Femoral Cutaneous nerve	
	3 Intermediate femoral cutaneous nerve	
	4 Nerve to Rectus Femoris	
	5 Nerve to vastus medius	
	6 Nerve to Vastus Lateralis	
	7 Nerve to vastus intermedius	
	8 Saphenous nerve	
<b>PROMPTS</b>		

**ACEM 2006.1 PRIMARY VIVA EXAMINATION**

**SUBJECT: ANATOMY**

**TOPIC:** Femoral nerve and myotomes \_\_\_\_\_ **NUMBER:** \_\_\_\_\_ Fri 5

<b>OPENING QUESTION</b>		<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	Could you outline the lower limb myotomes?	
	1 L2 & 3 Hip flexors & Adductors	
	2 L3 & 4 Knee extensors & Hip Abductors	
	3 L4 & 5 Hip extensors	
	3 L5 & S1 Knee flexors	
	4 L4 & 5 Ankle and long dorsi flexors	
	5 S1 & 2 Plantar flexors	
	6 Eversion L5 & S1	
	7 Inversion L4	5 of 7 to pass
<b>PROMPTS</b>	What is the innervation of the muscles of the ..... etc?	
<b>SECOND QUESTION (if needed)</b>	What is the motor distribution of the femoral nerve?	
<b>POINTS REQUIRED</b>	Courses through between the psoas and iliacus supplying both.	
	Passes into the femoral canal and begins to divide into its muscular branches in the femoral triangle supplying quadriceps femoris and articularis genu	Naming quads to pass. Naming specific muscles or added information gains extra credit.

<b>SECOND QUESTION</b>	<b>Describe the origin and course of the sciatic nerve.</b>	
<b>POINTS REQUIRED</b>	1 L4,5,S1,2,3* from the triangular sacral plexus form from the ant divs of these nn to eventually be the tibial portion of the sciatic while the peroneal portion comes from post divs of L4,5, S1,2	4/7 to pass
	2 They join in pelvis, and exit under piriformis* (line b/w PSIS & tip of coccyx) thru gr sciatic notch*	
	3 lies on ischium over post acetabulum*, next to bone b/w isch tuber & PSIS	
	4 under glut max* in buttock b/w gr troch & isch tuberosity	
	5 vert down with hamstrings*	
	6 upper popliteal fossa* > tibial & peroneal nn.	
<b>PROMPTS</b>		

**ACEM 2007.1 PRIMARY VIVA EXAMINATION**

**SUBJECT: ANATOMY**

**TOPIC:** sciatic nerve \_\_\_\_\_ **NUMBER:** \_\_\_\_\_

OPENING QUESTION		COMMENTS
POINTS REQUIRED	What structures are visible in this buttock dissection?	
	1 sciatic nerve (23)	mandatory
	2 piriformis (15)	mandatory
	3 gemelli sup (20) and inf (6)	
	4 post cutaneous nerve of the thigh (16)	
	5 gluteus medius (2)	6 to pass
	6 any other	
PROMPTS	Identify the sciatic nerve and piriformis	
SECOND QUESTION (if needed)	Describe the course of the sciatic nerve in the thigh	
POINTS REQUIRED	1 Leaves gluteal region at midpoint of greater trochanter and ischeal tuberosity	2/4 to pass
	2 Passes deep to long head of biceps	
	3 Lies on adductor Magnus	
	4 Generally divides in lower third (12% common fibular branch passes thru piriformis), often divides early	
PROMPTS	Where does it divide and into what	
THIRD QUESTION (if needed)	Describe its motor distribution in the thigh	
POINTS REQUIRED	1 tibial branch – hamstrings and part of adductor Magnus	Pass if say generic hamstrings

SECOND QUESTION (if needed)	Can you identify the sciatic nerve and the course of the sciatic nerve in the thigh?	
POINTS REQUIRED	1 Appropriate identification of the sciatic nerve	Must know
	2 Enters by passing deep to piriformis, usually.	Could know
	3 Enters the upper thigh deep to the hamstrings	Could know
	4 After biceps overarches the nerve the, nerve lies deeply between semimembranosus and biceps	Should know
	5 Divides into peroneal and tibial nerves about 5 cm above the knee joint	Should know
	6 Giving off muscular branches to hamstrings	Must know
		Identify nerve on image & identify 3 of 5 to pass
PROMPTS		

<b>BONUS QUESTION</b>	<b>Describe the course and branches of the tibial nerve in the leg</b>	
	Tibial nn is the continuation of the sciatic nn (after it divides into tibial and common peroneal)	

	<p>Runs vertically down middle of pop fossa          Passes deeply between heads of gastrocnemius          Runs with pop vessels beneath fibrous arch of origin of soleus.          Enters calf below this fibrous arch          Gives motor branches to all mm that arise in pop fossa</p> <ul style="list-style-type: none"> <li>Plantaris</li> <li>Both heads of gastroc</li> <li>Soleus</li> <li>Popliteus</li> </ul> <p>Branch to popliteus hooks around lower border of popliteus to enter its deep (tibial) surface.          Has only 1 cutaneous branch ;sural nn          Runs vertically down between 2 heads of gastroc          Pierces deep fascia halfway down calf (replaces post cutaneous nn of thigh)          In superficial fat it joins sural communicating nn and lies close to small saphenous vv.          Nerve is lateral to vein          3 articular branches ; genicular nerves which accompany sup,inf and medial genicular aa.          Tibial n runs straight down middle of calf, deep to soleus          Post tib aa is at first lat to it. The aa then passes ant to it and continues down on medial side of nn          Nerve ends under middle of flexor retinaculum by dividing into medial and lateral plantar nn          Surface marking is middle of pop fossa to midway between med malleolus and tendo calcaneus          Gives branches to ; Those listed above</p> <ul style="list-style-type: none"> <li>Flex dig longus</li> <li>Flex hall longus</li> <li>Tib post</li> </ul> <p>Med calcaneal nns (pierce flex ret to supply skin of heel)</p>
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<p>Question 5:</p> <p>Discussion:          Common fibularis (common fibular n/common peroneal n)</p>	<p>a. Outline the course of the common fibular nerve and its main branches.</p> <p>b. What does it supply? (Motor and sensory)</p>	<p>Origin: from sciatic n as it bifurcates in apex pop fossa          Passes over post head of fib and then winds around neck of fib</p> <p>Divides into sup and deep fib n, also br to knee jt.</p> <p>Common- supplies skin posterolat leg</p> <p>Superficial br -motor supply to lateral compartment, and sensory supply distal 1/3 ant leg and foot</p> <p>Deep branch motor to ant mm of leg and dorsum of foot, and Sensory to 1<sup>st</sup> web space foot.</p>	<p>For a pass:          Origin,          Fib head,          Main branches,          Motor and sens supply</p>
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<b>SECOND QUESTION</b>	<b>Please describe the course of the femoral artery from the inguinal ligament to the popliteal fossa</b>	
<b>POINTS REQUIRED</b>	1 Art enters thigh at midinguinal point* (mid b/w ASIS & pubic symp on psoas tendon overlying capsule of hip jt)	*essential
	2 Runs deep to sartorius at lower end of triangle*	
	3 Enters adductor canal*	
	4 Anterior to femoral vein (post to saphenous nerve)	
	5 Passes into popliteal fossa through adductor hiatus* in adductor magnus	
<b>PROMPT</b>	<b>At which point does it enter the thigh?</b>	
<b>PROMPTS</b>	<b>Please name the branches of femoral artery in the femoral triangle.</b>	
	Superficial cutaneous branches: Superficial circumflex iliac Superficial epigastric Superficial external pudendal Deep external pudendal Profunda femoris	Mention existence of cutaneous branches and name profunda
<b>PROMPTS</b>		

<b>SECOND QUESTION (if needed)</b>	Describe the branches and course of the femoral artery.	
<b>POINTS REQUIRED</b>	1 4 superficial branches in fem triangle (superf epig, superf cx iliac, superf and deep pudendal)	The 3 general points to pass
	2 Profunda femoris ("deep artery of thigh") branches off post-lat in triangle to supply thigh, passes behind add longus. Gives med and lat cx fem arteries. Med cx fem supplies NOF	
	3 Fem artery continues down thigh deep to Sartorius and pass through adductor canal and becomes popliteal art at adductor hiatus	
<b>PROMPTS</b>		
<b>THIRD QUESTION (if needed)</b>		
<b>POINTS REQUIRED</b>	1	
	2	

<b>SECOND QUESTION (if needed)</b>	Describe the surface markings of the Fem Artery in the femoral triangle	
<b>POINTS REQUIRED</b>	1 Mid Inguinal point	
	2 mid way between Pub symphysis and ASIS	All correct to pass
	3 exits distally under sartorius	
	4	
	5	
	6	
<b>PROMPTS</b>		
<b>THIRD QUESTION (if needed)</b>	Describe the anastomoses associated with the femoral artery	
<b>POINTS REQUIRED</b>	1 trochanteric (head of femur) via med and lat fem c-flex	
	2 cruciate (lessr trochanter) as above with inf glut atr	
	3 geniculate (popl fem and tibial arts)	Extra detail
	4	

TOPIC 5		COMMENTS
<b>QUESTIONS AND POINTS REQUIRED</b>	Demonstrate / describe the sensory innervation of the foot.	Saphenous – medial dorsum to base of big toe, Superficial peroneal – dorsum, Deep peroneal – 1 <sup>st</sup> web space, sural – lateral, Medial and lateral plantar nerves on the sole, Medial calcaneal – heel. 5/7 to pass.
	Demonstrate the dermatomes below the knee.	4,5, S1, S2 First 3 correct to pass

TOPIC: Ankle \_\_\_\_\_ NUMBER: 1.4

OPENING QUESTION		COMMENTS
	Commencing with its origin in the foot, describe the course and relations of the long saphenous vein	
<b>POINTS REQUIRED</b>	1 commences at medial side of dorsal venous arch	Require course
	2 course upward in front of medial malleolus	
	3 crosses to behind medial border of tibia and pass behind knee ( 1 handsbreath behind medial border patella)	
	4 spirals forward across medial aspect thigh to pass through cribriform fascia and join femoral vein	
	5 perforating veins connect LSV and deep system - below med malleolus, 10cm above med malleolus mid calf knee mid thigh	
	6 LSV accompanied by saphenous nerve	Accompanying nerve
	7 valves along course (optional)	
<b>PROMPTS</b>		
<b>SECOND QUESTION (if needed)</b>	What functional deficit results from a tibial nerve injury at the knee and explain why	
<b>POINTS REQUIRED</b>	1 Unable to stand on tiptoes (calf flexors lost) – soleus, TP, FDL, FHL	
	2 Sensory loss – Medial Calcaneal, medial and lateral plantar nerves – loss of sensation over leg and sole of foot	
	3 intrinsic muscles of foot lost – medial & lateral plantar nerves	

COMMENTS

TOPIC: Great Toe \_\_\_\_\_ NUMBER: 2-4 \_\_\_\_\_

<b>OPENING QUESTION</b>	What nerves are responsible for sensation of the great toe?	<b>COMMENTS</b>
<b>POINTS REQUIRED</b>	1 Deep peroneal in the web	3 to pass
	2 superficial peroneal on the dorsum	
	3 medial plantar on the bottom	
	4 sometimes some saphenous on medial side at the MTP	
	5	
	6	
	7	
<b>PROMPTS</b>		
<b>SECOND QUESTION (if needed)</b>	What roots?	Pass
<b>POINTS REQUIRED</b>	1 L5	
	2	
	3	
	4	
	5	
	6	
<b>PROMPTS</b>		
<b>THIRD QUESTION (if needed)</b>	What myotomes govern movement of great toe?	Both to pass
<b>POINTS REQUIRED</b>	1 5,1 extension	
	2 1,2 for plantar flexion	
	3	
	4	
<b>PROMPTS</b>	Legitimate	

**ACEM 2007.1 PRIMARY VIVA EXAMINATION**

**SUBJECT: ANATOMY**

**TOPIC:** discussion – lower limb \_\_\_\_\_ **NUMBER:** \_\_\_\_\_

OPENING QUESTION		COMMENTS
POINTS REQUIRED	Describe the dermatomes of the lower limb	needed
	1 indicate (?on self) L1,2,3,4,5 winding around leg	
	2 S1 S2 back of leg s1 becomes lateral foot, L5 medial foot	
	3 axial line down postero medial aspect of leg	
	5	
PROMPTS		
SECOND QUESTION (if needed)	Please describe the cutaneous nerves of the lower limb	5 facts in total to pass
POINTS REQUIRED	1 lateral cutaneous nerve of thigh L2,3 anterior cutaneous branch of femoral nerve L2-4 Intermediate and medial femoral cut nerves Ilio-inguinal Obturator Posterior cutaneous S1-3 Most of thigh	
	2 saphenous nerve ( from femoral) L3,4 (antero medial leg) lateral sural cutaneous n and sural (postero lateral leg)	
	3 fibula (peroneal) nerves anterolateral leg and dorsum of foot	
	4 calcaneal branches of tibial and sural nerves lateral and medial plantar nerve from tibial (sole )	
	5 deep fibular (deep peroneal) nerve L5 in first web space	

Question 5: Discussion	Describe the superficial venous drainage of the lower limb	Dorsal v arch of foot drain to GSV, ascends ant to MM, then behind med fem condyle (hand breadth post to patella), then up med thigh through fascia lata in saph opening into fem V.  Numerous valves, perforators to deep system and anastomoses with SSV.  Laterally, Small SV arises from dorsal venous arch, ascends behind LM, lateral to Achilles, penetrates fascia at mid-line, between heads of gastroc to join popliteal vein	1. Identify MM, fem condyle and saph opening landmarks of GSV  2. Name SSV and general location  3. Identify connection with deep system via perforators
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