



FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA  
SECOND EXAMINATION FOR MEDICAL DEGREES – OCTOBER 2015  
ANATOMY PAPER II

THREE HOURS

MONDAY 12<sup>th</sup> OCTOBER 2015

Answer all FIVE questions

Answer EACH QUESTION in a SEPARATE BOOK

Use diagrams where necessary

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1. A 45 year - old man presented to a medical ward with acute onset paralysis of the right side of the face, difficulty in closing the right eye and excessive tearing, drooling (drop saliva uncontrollably), loss of taste and increased sensitivity to sound on the same side of two days.
  - 1.1 What is the nerve affected? State its branches. (30 marks)
  - 1.2 List the muscles affected in this patient. (20 marks)
  - 1.3 Describe the pharyngeal arch that the above nerve belongs to. (25 marks)
  - 1.4 Describe the light microscopic appearance of a peripheral nerve. (25 marks)
  
2. A 56 year - old female was found to have a cardiac murmur best heard over the medial end of the second left intercostal space.
  - 2.1 State one heart abnormality that can explain above findings. (10 marks)
  - 2.2 Describe the gross anatomical features of the semilunar valves. (30 marks)
  - 2.3 Describe the internal structure of the right ventricle. (20 marks)
  - 2.4 Describe the light microscopic appearance of a cardiac valve. (20 marks)
  - 2.5 Describe the embryological basis for the occurrence of transposition of great vessels. (20 marks)
  
3. A 30 year-old male was admitted to a surgical ward with swelling in the left popliteal fossa. After the clinical examination and investigations the swelling was diagnosed to be a malignant tumour of the lower end of the left femur.
  - 3.1 What are the other abnormal swellings you may find in the popliteal fossa? (20 marks)
  - 3.2 Describe the boundaries of the popliteal fossa. (40 marks)
  - 3.3 Explain the embryological development of the left femur. (20 marks)
  - 3.4 Describe the light microscopic appearance of the popliteus muscle. (20 marks)

4 A 50 year-old male was admitted to surgical casualty with a painful lump in the buttock for three days duration. On examination the lump was between the anal orifice and the right ischial tuberosity. It was warm and tender. Later it was diagnosed to be an ischiorectal fossa abscess and treated with incision and drainage under general anaesthesia.

4.1 State the boundaries and contents of the ischiorectal fossa. (25 marks)

4.2 What is the neurological structure most likely to get damaged during this surgical procedure. (05 marks)

4.3 State five anatomical differences between upper and lower halves of the anal canal. (20 marks)

4.4 Describe briefly the embryological development of the anal canal. (25 marks)

4.5 Describe the light microscopic appearance of lower half of the anal canal. (25 marks)

5. A 40 year-old male was admitted to surgical casualty with a history of fall from a tree. He complained of severe backache and could not move his right leg. On examination there was spastic paralysis of right lower limb and 'Babinski sign' was positive on right side. There was a band of complete anaesthesia over right side of the trunk at the level of the umbilicus. He had left sided loss of pain and temperature sensation a few centimeters below the level of umbilicus involving the left lower limb. CT Scan revealed a vertebral fracture with a spinal cord injury.

Using your knowledge of neuroanatomy answer the following questions.

5.1 State the vertebral level of the spinal cord lesion. (15 marks)

5.2 Explain neurological basis of the above physical signs. (40 marks)

5.3 Illustrate the histological appearance of the gray and white matter at the thoracic level of the spinal cord using a labeled diagram. (25 marks)

5.4 Briefly describe the embryological development of the spinal cord. (20 marks)