



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

THREE HOURS

MONDAY 29<sup>th</sup> JUNE 2015

Answer all FIVE questions

Answer EACH QUESTION in a SEPARATE BOOK

Use diagrams where necessary

1. A 45 year-old male who has undergone surgical repair of the ulna nerve, median nerve, flexor digitorum superficialis, flexor digitorum profundus and flexor pollicis longus tendons attended to a surgical clinic six months after the surgery for follow up.
  - 1.1 Describe how you would examine to find out whether the structures mentioned above are functioning normally. (40 marks)
  - 1.2 List the muscles, arteries and nerves, of the flexor compartment of the forearm. (20 marks)
  - 1.3 Describe briefly the process of formation of the embryonic germ layer which gives rise to the forearm muscles. (20 marks)
  - 1.4 Describe the light microscopic appearance of the ulna artery. (20 marks)
  
2. A 50 year-old female visited her physician with the complaints of progressive jaundice, frequent bowel movements with pale, greasy feces and back pain over the last week. Following a series of investigations, she was found to have obstructive jaundice caused by carcinoma of the head of the pancreas.
  - 2.1 Explain the anatomical basis for the jaundice and back pain experienced by the patient (10 marks)
  - 2.2 Describe the anatomical relations of the head of the pancreas. (30 marks)
  - 2.3 State the blood supply to the pancreas. (20 marks)
  - 2.4 Describe the light microscopic appearance of the exocrine pancreas. (20 marks)
  - 2.5 Describe the embryological development of the mid gut. (20 marks)

3. A 60 year- old male attended a surgical clinic with a complaint of bleeding per rectum. Proctoscopic examination revealed hemorrhoids and he was treated with haemorrhoidal injection (sclerotherapy) submucosally to haemorrhoidal masses at right anterior, right posterior and left lateral positions. A day after, he was admitted to a surgical casualty with haematuria.
- 3.1 Describe the anatomical relations of the anal canal in male. (25 marks)
  - 3.2 How would you explain the occurrence of haematuria of this patient? (15 marks)
  - 3.3 Describe the blood supply and lymphatic drainage of the anal canal. (20 marks)
  - 3.4 Discuss the histology of the anorectal junction. (20 marks)
  - 3.5 Describe the embryonic development of the anal canal. (20 marks)
4. A 25 year- old soldier was brought to the hospital with a penetrating injury through the neck and was found to be dead on admission. The Judicial Medical Officer (J.M.O.) of the hospital reported that the deceased had an injury in the front of the neck cutting through the isthmus of the thyroid and penetrating into the seventh cervical vertebrae (C<sub>7</sub>).
- 4.1 List the structures that would have been possibly damaged. (20 marks)
  - 4.2 Draw a labeled diagram of transverse section of the neck at the level of C<sub>7</sub>. (25 marks)
  - 4.3 Describe the osteology of the C<sub>7</sub> vertebra. (15 marks)
  - 4.4 Describe the light microscopic appearance of the oesophagus. (20 marks)
  - 4.5 Describe the developmental anomalies of the oesophagus. (20 marks)
5. A 45 year-old patient was admitted to a hospital with persistent headache, vomiting and unsteadiness in walking. On examination, he was unable to sit on the bed unsupportedly and had a broad-based gait. His right upper and lower limbs were hypotonic and ophthalmoscopic examination revealed bilateral papilloedema. Further investigations revealed that the patient has a tumor in the ventral part of the cerebellum.
- 5.1 State the reason/s for
    - 5.1.1 the inability to sit on the bed unsupportedly. (10 marks)
    - 5.1.2 loss of tone in right upper and lower limbs. (10 marks)
    - 5.1.3 bilateral papilloedema . (15 marks)
  - 5.2 Describe briefly the gross anatomy of the 4<sup>th</sup> ventricle of the brain. (25 marks)
  - 5.3 Draw a labeled diagram to show the light microscopic appearance of the cerebellar cortex. (20 marks)
  - 5.4 Describe briefly the development of the cerebellum. (20 marks)