



FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA
SECOND EXAMINATION FOR MEDICAL DEGREES – DECEMBER 2014
ANATOMY PAPER II

THREE HOURS (2.00-5.00 P.M.)

MONDAY 8TH DECEMBER 2014

Answer all FIVE questions

Answer EACH QUESTION in a SEPARATE BOOK

Use diagrams where necessary

1. A 25 year - old male was admitted to a casualty ward with a complaint of pain and swelling over the right elbow following a motorbike accident. On examination, it was noted that pain sensation to pinpricks was absent in his right little finger and the medial border of palm. He was unable to grip a piece of paper placed between his right index and the middle fingers. A fracture of the medial epicondyle of the humerus was observed on radiography.
 - 1.1 Explain the anatomical basis for the absence of pain sensation to pinpricks to the right little finger and the medial border of the palm and inability to grip a piece of paper placed between right index and middle fingers observed in the above patient. (30 marks)
 - 1.2 Describe the anatomical relations of the elbow joint. (20 marks)
 - 1.3 Describe the light microscopical appearance of the epiphyseal growth plate. (25 marks)
 - 1.4 Describe briefly the events that take place during the process of gastrulation. (25 marks)

2. A 50 year - old patient with diabetes was admitted to a surgical casualty ward with complaint of pain over the right shoulder and fever for five days. On examination right shoulder was normal. Ultrasound scan of the abdomen revealed a right subphrenic abscess.
 - 2.1 Explain the anatomical basis of pain over the right shoulder in this patient. (15 marks)
 - 2.2 Describe the gross anatomy of the diaphragm. (40 marks)
 - 2.3 Describe briefly the embryological development of diaphragm. (25 marks)
 - 2.4 Describe the histology of gastroesophageal junction. (20 marks)

3

A 52 year - old patient was admitted to the surgical casualty with acute retention of urine due to enlarged prostate gland. Surgeon performed suprapubic catheterization of the bladder as the urethral catheterization failed. Later the patient was subjected to open prostatectomy. Postoperatively patient developed erectile impotence.

- 3.1 State the anatomical facts that need to be considered during male urethral catheterization. (20 marks)
- 3.2 Name the tissue layers that have to pass through when the bladder is catheterized suprapubically at midline. (15 marks)
- 3.3 Describe briefly the anatomical basis for the development of erectile impotence in this patient postoperatively. (10 marks)
- 3.4 State the anatomical relations of the prostate gland. (25 marks)
- 3.5 Name the types of epithelia present in different parts of male and female urethra. (15 marks)
- 3.6 Describe briefly the embryological development of the male urethra. (15 marks)

4. A 30 year- old male was admitted to a surgical casualty following a blunt trauma to the forehead. There were no external wounds in the forehead or any part of the scalp. On examination he was found to have bleeding from nose and bilateral periorbital haematoma (black eye). He did not have any wounds inside or outside the nose. CT scan showed fracture of the frontal bone with bleeding into the frontal air sinus and there was no brain injury or fracture base of the skull.

- 4.1 Explain the anatomical basis of bleeding from nose and periorbital haematoma presence in this patient. (30 marks)
- 4.2 Describe the histological features of the epithelium lining the frontal air sinus. (20 marks)
- 4.3 Describe briefly the embryological development of the nasal cavity. (20 marks)
- 4.4 Write notes on gross anatomy of the maxillary air sinus. (30 marks)

5. A 40 year - old male presented with diplopia when looking to the left. On examination, his left eyeball was adducted and there was weakness of muscles of facial expression on the left side. Investigations revealed a lesion in the pons.

- 5.1 Illustrate the possible location of the lesion and damaged structures using a labeled diagram. (20 marks)
- 5.2 Explain the anatomical basis of his diplopia when looking to the left. (15 marks)
- 5.3 How would you differentiate upper motor neuron facial nerve palsy from lower motor neuron facial nerve palsy? (20 marks)
- 5.4 Explain briefly the embryological development of the pons. (20 marks)
- 5.5 Describe the histology of different types of glial cells. (25 marks)