FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA
SECOND EXAMINAITON FOR MEDICAL DEGREES JULY 2012

ANATOMY PAPER II

THREE HOURS **MONDAY 16TH JULY 2012**

Answer all FIVE Questions
Answer EACH QUESTION in a SEPARATE BOOK
Use diagrams where necessary

1. A 25 year-old girl who suffered from an infected pimple on the nose over the last five days was presented with an abrupt onset of headache, periorbital oedema and bulging of the eyes (proptosis). In addition, she had palsies of III, IV, V (V_1 & V_2) and VI cranial nerves.
   - 1.1 Explain the anatomical basis for the clinical presentation of this patient. ***(50marks)***
   - 1.2 List the derivatives of the first and second pharyngeal arches. ***(25 marks)***
   - 1.3 Describe the light microscopic appearance of the skin. ***(25 marks)***

2. A 68 year-old, heavy smoking male was admitted to the hospital with complains of cough and dyspnea. His coughing up contained blood stained sputum. Broncoscopic examination revealed a presence of a mass at the lower end of the trachea. A biopsy confirmed the diagnosis of a malignant tumour.
   - 2.1 Explain the anatomical basis for the dyspnea and blood stained sputum observed in this patient. ***(05 marks)***
   - 2.2 Describe the gross anatomical relations of the trachea within the superior mediastinum. ***(25 marks)***
   - 2.3 Describe the lymphatic drainage of the lungs. ***(25 marks)***
   - 2.4 Describe the light microscopic appearance of the trachea. ***(25 marks)***
   - 2.5 Describe the embryological development of the lungs. ***(20 marks)***

3. Following a blunt trauma to the left side of the skull, an elderly woman complained of double vision when looking downwards and to the right and difficulty in walking down a stair-case. On examination, it was noted that she couldn't look at the tip of her nose. There was no ptosis. Using your knowledge in neuroanatomy, answer the following questions.
   - 3.1 Name the neurological structure that had been damaged in this patient. ***(10 marks)***
   - 3.2 List the functional component/s of the structure mentioned in 3.1. ***(05 marks)***
   - 3.3 State the anatomical basis for the signs and symptoms (underlined) observed in this patient. ***(25 marks)***
   - 3.4 Describe briefly the intracranial pathway of the structure mentioned in 3.1. ***(40 marks)***
   - 3.5 Describe in brief, the embryological development of the retina. ***(20 marks)***

P.T.O.

4. A 20 year-old male was admitted to the hospital with a sudden onset of central abdominal pain that lasted over a few hours. The surgeon who examined the patient decided for an emergency laparotomy. The abdomen was opened through the midline incision. An ischeamia of the intestine was observed due to twisting of the superior mesenteric artery following a small bowel volvulus.

4.1 State the layers that have been incised during the surgery. ***(15 marks)***

4.2 List the structures that undergo ischeamia when the superior mesenteric artery is injured. ***(15 marks)***

4.3 Describe the gross anatomical differences between the small intestine and the colon. ***(20 marks)***

4.4 Explain the physiological herniation and rotation of the midgut during the embryonic development. ***(25 marks)***

4.5 Describe the light microscopic appearance of the duodenum. ***(25 marks)***

5. A 50 year-old, obese, male carpenter who jumped out of the lower few steps of a ladder, complained of a severe pain in his right knee joint and difficulty in walking. The orthopedic surgeon who examined the patient found an undue anterior mobility of the right knee.

5.1 Using your knowledge in anatomy, explain the structure that had been injured in this patient. ***(15 marks)***

5.2 Describe the factors that are responsible for the stability of the knee joint. ***(30 marks)***

5.3 Describe the anatomical basis for the recurrent dislocation of the patella. ***(20 marks)***

5.4 Describe in brief two congenital malformations of the lower limb. ***(10 marks)***

5.5 Describe the light microscopic appearance of the hyaline cartilage. ***(25 marks)***