



FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA
SECOND EXAMINATION FOR MEDICAL DEGREES – NOVEMBER 2020
ANATOMY PAPER II

THREE HOURS

WEDNESDAY 2nd DECEMBER 2020

Answer all **FIVE** questions

Answer **EACH QUESTION** in a **SEPARATE BOOK**

Use **diagrams** where necessary

1. A 28-year-old male was admitted to the hospital complaining of severe pain following a blow to his right leg received during a football game. An X-ray revealed a fracture in the right fibular neck.
 - 1.1
 - 1.1.1 What is the nerve most likely to be injured? (10 marks)
 - 1.1.2 State the deformity of the foot. (05 marks)
 - 1.1.3 Explain the anatomical basis for the deformity stated in 1.1.2. (25 marks)
 - 1.2 State the gross anatomical relations of the ankle joint. (20 marks)
 - 1.3 Describe briefly the light microscopic appearance of epiphyseal growth plate during the process of endochondral ossification. (20 marks)
 - 1.4 List ten (10) derivatives of the mesodermal germ layer. (20 marks)

2. A 35-year-old man was admitted to a surgical ward with acute pain in the left loin and the testis. An ultrasound examination revealed a calculus at the junction of renal pelvis and ureter (pelvi-ureteric junction) and normal testis. He was diagnosed to have left ureteric colic with upper ureteric pain radiating to the testis.
 - 2.1
 - 2.1.1 Explain the anatomical basis for radiation of upper ureteric pain to the testis. (10 marks)
 - 2.1.2 Name the three (03) sites of anatomical narrowing of the ureter that a calculus may commonly lodge. (15 marks)
 - 2.2
 - 2.2.1 State the anatomical relations of the left ureter in a male. (15 marks)
 - 2.2.2 Draw a labeled diagram of cross section of the upper ureter to show its light microscopic appearance. (20 marks)
 - 2.3
 - 2.3.1 Describe the blood supply of the left testis with its clinical relevance. (20 marks)
 - 2.3.2 Describe the congenital abnormalities which are associated with the descent of the testis. (20 marks)

3. A 50-year-old woman underwent total thyroidectomy for a diffuse goiter. Her vocal cords were normal and she had normal voice prior to the surgery. When she attended to post-operative follow up clinic she complained of hoarseness of voice. Examination of the larynx revealed paralysis of right vocal cord.
- 3.1
- 3.1.1 Explain the anatomical basis for her hoarseness of voice. (10 marks)
- 3.1.2 What precautions could have been taken during surgery to avoid this complication? (10 marks)
- 3.1.3 List the tissue layers encountered by the surgeon when making a transverse incision to expose the thyroid gland. (10 marks)
- 3.2 Describe briefly the gross anatomy of the thyroid gland. (30 marks)
- 3.3 Describe the light microscopic appearance of the thyroid gland. (20 marks)
- 3.4 Outline the embryological development of the thyroid gland. (20 marks)
4. A 40-year-old man had a severe blow to the left side of his head over the temporal region. Several hours later, he developed slurring of speech and weakness of his right upper limb and was admitted to the hospital. CT scan of the brain revealed an extradural (epidural) haematoma.
- 4.1
- 4.1.1 Explain why this patient developed an extradural haematoma. (20 marks)
- 4.1.2 Outline the anatomical basis of "slurring of speech" and "weakness of the right upper limb." (40 marks)
- 4.2 Describe briefly the classification of neurons according to their morphology giving examples for each type. (20 marks)
- 4.3 Describe briefly the embryological development of cerebral hemispheres. (20 marks)
5. A 50-year-old man with a known history of mitral stenosis is presented with difficulty in swallowing. A Barium swallow X ray revealed that the oesophagus is externally compressed by the enlarged heart.
- 5.1
- 5.1.1 State the enlarged chamber of the heart that compresses the oesophagus. (10 marks)
- 5.1.2 List three (03) anatomical structures other than enlarged heart that could appear to compress the oesophagus in above barium swallow. (15 marks)
- 5.2
- 5.2.1 Describe the blood supply of the oesophagus with its clinical relevance. (30 marks)
- 5.2.2 Describe the light microscopic appearance of the middle one third of oesophagus. (20 marks)
- 5.3 Describe the embryological development of interatrial septum. (25 marks)