



FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA GALLE

SECOND EXAMINATION FOR MEDICAL DEGREES – JANUARY 2020

ANATOMY- PAPER II

THREE HOURS (2.00 - 5.00 P.M.)

Answer all FIVE questions

MONDAY 06TH JANUARY 2020

Answer EACH QUESTION in a SEPARATE BOOK

Use diagrams where necessary

1. A 30 year-old man presents to the surgical casualty ward with a superficial cut injury to the postero-lateral surface of the proximal third of the right forearm. On examination, sensation over the forearm and the hand is normal, no obvious wrist drop but wrist extension is weak.
 - 1.1 1.1.1 Which nerve is affected? (10 marks)
 - 1.1.2 Describe the anatomical basis for the clinical findings stated above. (30 marks)
 - 1.1.3 Describe the course and the distribution of the artery accompanying the nerve you mentioned in 1.1.1 (20 marks)
 - 1.2 Describe the light microscopic appearance of the skin in the dorsum of the hand. (20 marks)
 - 1.3 State the embryological origin of different types of tissues present in the forearm. (20 marks)

2. A 45 year-old man admits to the medical casualty ward complaining of acute onset of left sided chest pain which radiates to the inner surface of the left upper arm. He was diagnosed as having myocardial infarction involving the apex with the anterior wall of the left ventricle and the anterior half of interventricular septum. A bypass surgery was performed later.
 - 2.1 2.1.1 Describe briefly the anatomical basis for the radiation of chest pain to the inner surface of the left upper arm. (15 marks)
 - 2.1.2 Name the artery involved and explain the reasons for your answer. (15 marks)
 - 2.2 Describe the venous drainage of the heart. (20 marks)
 - 2.3 Describe the light microscopic appearance of the wall of left ventricle. (25 marks)
 - 2.4 Describe the embryological development of ventricles. (25 marks)

3. A 50 year-old woman presents with impaired sensation and numbness over the face on the left side. Her muscles of facial expression function normally. Investigations revealed a tumour at the left cerebello-pontine angle.
- 3.1 What is the cranial nerve affected by the tumour in this patient? (10 marks)
 - 3.2 State the area of sensory impairment and explain its anatomical basis. (25 marks)
 - 3.3 Name four muscles that would be affected in this patient. (10 marks)
 - 3.4 Draw a labeled longitudinal section of the brainstem to show the nuclei of the affected cranial nerve. (20 marks)
 - 3.5 Describe briefly the light microscopic appearance of the sensory ganglion of the cranial nerve affected. (20 marks)
 - 3.6 State the embryological origin of the nerve cells in the (a) motor nucleus (b) sensory nucleus and the (c) sensory ganglion of the affected cranial nerve. (15marks)
4. A 60 year-old man presents to the ENT clinic with bleeding from the nose and excessive flow of tears from the right eye for one week duration. CT scan of the head shows a carcinoma of the maxillary sinus spreading to the lateral nasal wall.
- 4.1 4.1.1 Explain the anatomical basis for the excessive flow of tears in this patient. (10 marks)
 - 4.1.2 State two adjacent anatomical structures (except the lateral nasal wall) that could get involved and state the effects of involvement due to the spread of carcinoma. (20 marks)
 - 4.2 Draw a labeled diagram to show the structure of the lateral nasal wall. (25 marks)
 - 4.3 Describe the light microscopic appearance of the nasal mucosa. (25 marks)
 - 4.4 Describe the embryological development of the nose. (20 marks)
5. A 34 year-old man presents with a painless scrotal swelling of 3 months duration. As it is a suspicious cancerous lesion, consultant surgeon decided to do a testicular biopsy under anesthesia.
- 5.1 State in order the different tissue layers need to be incised (from superficial to deep) during the testicular biopsy. (15 marks)
 - 5.2 Describe the lymphatic drainage of the scrotum and the testis. (20 marks)
 - 5.3 Explain briefly the nerve supply of the scrotum. (15 marks)
 - 5.4 Describe the embryological development of the testis. (25 marks)
 - 5.5 Describe the light microscopic appearance of the testis. (25 marks)