



FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA GALLE
SECOND EXAMINATION FOR MEDICAL DEGREES – APRIL 2019

ANATOMY- PAPER II

THREE HOURS (2.00 - 5.00 P.M.)

Answer all FIVE questions

MONDAY 22ND APRIL 2019

Answer EACH QUESTION in a SEPARATE BOOK

Use diagrams where necessary

1. 1.1 Bronchoscopic examination of a 65 year-old heavy smoker revealed a small tumor in a tertiary bronchus of the middle lobe of the right lung. The carina seemed normal in appearance. The affected segment of the lung was surgically removed.
 - 1.1.1 Describe the anatomical basis for the surgical removal of only the affected segment of the lung. (20 marks)
 - 1.2 State the vertebral levels that correspond to the carina during different phases of respiration. (10 marks)
 - 1.3 Describe the anatomical relations of the mediastinal surface of the right lung. (20 marks)
 - 1.4 Describe the light microscopic appearance of a tertiary bronchus. (25 marks)
 - 1.5 Describe the prenatal development of lungs. (25 marks)
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2. 2.1 A 70 year- old man was admitted to a surgical casualty with retention of urine. On examination bladder was full and per rectal examination revealed an enlarged prostate gland. A Urinary catheter was inserted to the bladder to relieve his discomfort.
 - 2.1.1 Explain the anatomical basis of inserting a urinary catheter in the above patient in relation to the urethra. (20 marks)
 - 2.1.2 Describe the consequences of an accidental rupture of bulbar urethra when inserting the catheter. (10 marks)
 - 2.2 Describe the gross anatomy of the prostate gland. (30 marks)
 - 2.3 Describe the light microscopic appearance of the prostate gland. (20 marks)
 - 2.4 Describe the development of male urethra. (20 marks)

3. 3.1 A 65 year-old patient was admitted to a medical ward following a cerebro-vascular accident. On examination, weakness and sensory loss were found in the right leg and in the right foot. There was no motor or sensory loss in his upper limbs and speech and hearing were normal.
- 3.1.1 Name the major cerebral blood vessel involved in this patient. (10 marks)
- 3.1.2 Using a labelled diagram describe the area of the cerebral hemisphere supplied by the blood vessel mentioned in 3.1.1 (15 marks)
- 3.1.3 State the anatomical basis for sparing of upper limb functions, hearing and speech. (25 marks)
- 3.2 Describe briefly the light microscopic appearance of the above blood vessel. (25 marks)
- 3.3 Describe the embryological development of cerebral hemispheres. (25 marks)
4. 4.1 A 60 year-old patient developed acute airway obstruction while swallowing a paracetamol tablet in the ward. A doctor immediately inserted a needle through the cricothyroid membrane (cricothyroid puncture) in to the larynx to save his life. As initial measures were not effective, tracheostomy was performed later.
- 4.1.1 State where the tablet was stuck in the larynx. (05 marks)
- 4.1.2 Explain the anatomical basis for your answer in 4.1.1 (05 marks)
- 4.1.3 State the tissue layers that doctor encounter during the
- a) cricothyroid puncture. (10 marks)
- b) tracheostomy (10 marks)
- 4.2 Describe the origin, course and distribution of the nerves (sensory and motor) supplying the larynx and the effects following injury to them. (30 marks)
- 4.3 Describe the light microscopic appearance of the cricoids cartilage. (20 marks)
- 4.4 Describe the fate of 4th pharyngeal arch. (20 marks)
5. 5.1 A 50 year-old farmer was bitten by a snake on his right hand and the right foot. He was brought to the hospital with two tourniquets to his right arm and right thigh. On admission, he had features suggestive of compartment syndrome in his right forearm arm and right leg.
- 5.1.1 List four arteries (both on upper limb and lower limb) in which the surgeon would check the pulses in this patient. (10 marks)
- 5.1.2 Explain the anatomical basis of compartment syndrome in this patient. (15 marks)
- 5.2 Draw a clearly labeled cross section of the
- a) middle of forearm (20 marks)
- b) middle of leg (20 marks)
- 5.3 Explain briefly the embryological development of femur. (20 marks)
- 5.4 Describe the light microscopic appearance of tibial nerve. (15 marks)