UNIVERSITY OF JAFFNA, SRILANKA
FIRST EXAMINATION FOR MEDICAL DEGREES – APRIL 2025
ACADEMIC YEAR 2022/23
ANATOMY – PAPER II

Date :21.04.2025 **Time: Three hours**

Answer All TEN Questions
Answer EACH QUESTION in a separate answer book.

1. A 54-year-old man presents with right-sided inguinoscrotal swelling. He diagnosed with a reducible indirect right inguinal hernia and underwent laparoscopic hernial repair. Topographic anatomy of internal aspect of the anterior abdominal wall (Laparoscopic view) is shown in figure 1. Answer the questions referring the figure 1.

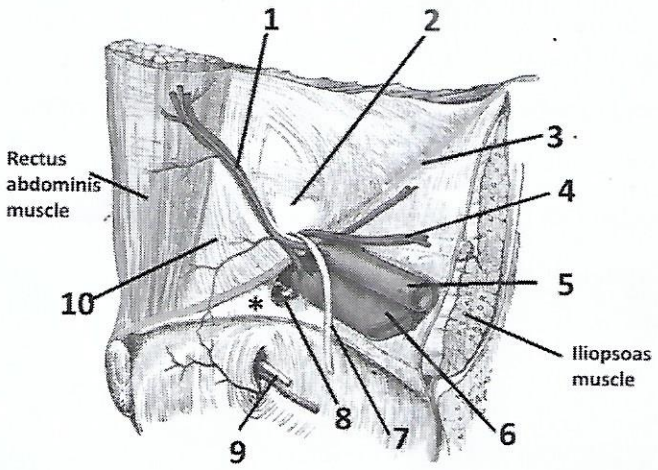

Figure 1

1.1 Identify the structures 1 - 10 30 Marks

1.2 Regarding the inguinal hernia

1.2.1 Mention the number indicating the site of indirect inguinal hernia 10 Marks

1.2.2 What is the structure providing the landmark during operation to differentiate the indirect from direct inguinal hernia 10 Marks

1.2.3 Explain the anatomical basis of indirect inguinal hernia 10 Marks

1.2.4 Patient complains burning sensation over right scrotal skin after hernial repair. Write the anatomical reason for it 05 Marks

1.2.5 List the structures forming the sac of the direct inguinal hernia 10 Marks

1.3

1.3.1 Mention the number indicating the site of femoral hernia 10 Marks

1.3.2 Structure indicated by '*' is divided to reduce large femoral hernia. Identify the structure '*' 10 Marks

1.3.3 Name the artery that might pass over the structure '*' leading to haemorrhage when it is divided 05 Marks

2. A 30-year-old man experienced a sudden twisting injury to his left knee while playing hockey. He subsequently reported pain and instability in the knee joint. Physical examination revealed tenderness along the joint line and excessive anterior translation of the tibia relative to the femur

2.1	Identify the most likely anatomical structure damaged in this patient based on the clinical presentation	10 Marks
2.2	Explain the anatomical basis of the observed excessive anterior tibial translation in this patient, relating it directly to the function of the damaged structure	15 Marks
2.3	Mention the function of the collateral ligaments of the knee joint	15 Marks
2.4	State which meniscus (medial or lateral) is more frequently injured	10 Marks
2.5	Explain the anatomical factors contributing to the increased susceptibility of the meniscus identified in question 2.4 to injury	10 Marks
2.6	Describe the screw-home mechanism (locking and unlocking) of the knee joint, including the roles of specific anatomical structures in this process	25 Marks
2.7	Mention the different zones of vascular supply within the menisci	15 Marks

3. A 13-year-old boy presents with right facial pain and purulent nasal discharge. An X-ray reveals a fluid level in the maxillary sinus, confirming acute maxillary sinusitis.

3.1	Describe the anatomy of the maxillary sinus	20 Marks
3.2	Trace the drainage pathway of the maxillary sinus	10 Marks
3.3	Mention the clinical significance of the drainage pathway described in 3.2	15 Marks
3.4	Describe the drainage pathway of the lacrimal apparatus from the lacrimal puncta to the nasal cavity	15 Marks
3.5	Draw a labelled schematic diagram of the lateral wall of the nasal cavity, highlighting key anatomical structures	25 Marks
3.6	List the cell types found in the olfactory epithelium and briefly state their functions	15 Marks

4.

4.1 A 35-year-old-man had a coronary bypass surgery. During the surgery, the sternum was split to access the internal organs/structures, and anastomosis of the internal thoracic artery with the anterior interventricular artery (left anterior descending artery) was performed.

4.1.1 Mention the artery that gives off the internal thoracic artery — 10 Marks

4.1.2 List the main parts of the sternum and mention the type of joints that lie in between them separately — 20 Marks

4.1.3 List the contents of the anterior mediastinum — 20 marks

4.1.4 Write the intercostal spaces directly supplied by the internal thoracic artery precisely. — 10 marks

4.1.5 Outline the nerve supply to the fibrous pericardium — 10 Marks

4.2 Outline five (5) features of autosomal recessive inheritance pattern — 30 marks

5. A 45-year-old man presents to the emergency department with severe left-sided flank pain that radiates to the groin. A CT/KUB scan confirms the presence of a 1 cm stone in the left distal ureter. (Figure 2)

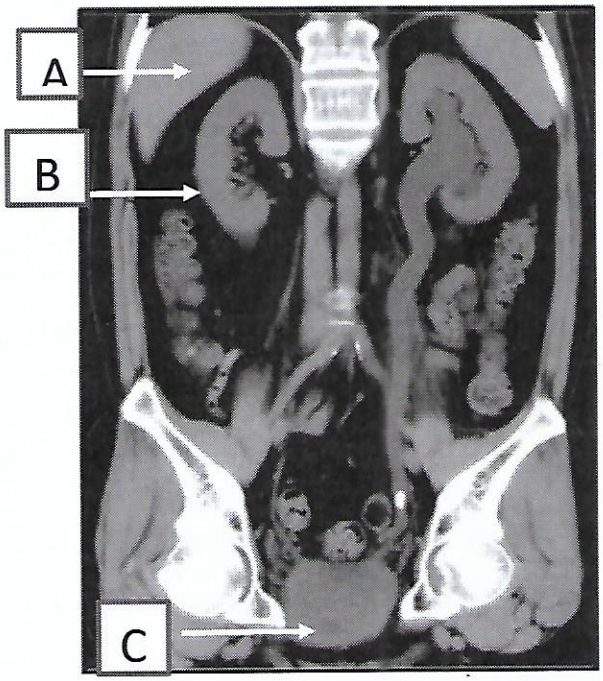

Figure 2: CT/KUB

5.1 Expand the acronym, "KUB"? — 10 Marks

5.2 What section of CT/KUB is demonstrated in Figure 2? — 10 Marks

5.3 Identify A, B, and C mentioned in the figure 2 — 10 Marks

5.4 Mention the normal length of an adult ureter — 10 Marks

5.5 List three physiological narrowing of ureter — 10 Marks

5.6 Explain the anatomical basis for the loin to groin pain in this patient — 10 Marks

5.7 List the histological layers of the ureter — 10 marks

5.8 Briefly describe the course of the left ureter — 30 Marks

6 A 64-year-old man was admitted to the emergency department with a traumatic injury to the liver. A laparotomy was performed through a midline (median) surgical incision. During the surgical management, the surgeon used the Pringle's manoeuvre.

6.1 What is the purpose of using the Pringle's manoeuvre in this patient? 10 Marks

6.2 Mention the structure(s) that attach(es) liver to anterior abdominal wall 10 Marks

6.3 Mention the structure(s) that are present at the porta hepatis 25 Marks

6.4 Outline the boundaries of epiploic foramen (foramen of Winslow) 25 Marks

6.5 List the structures that are encountered during a midline surgical incision (in order) 30 marks

7. Figure 3 shows a schematic diagram of brain with different types of intracranial haemorrhages. Answer the questions using the figure 3.

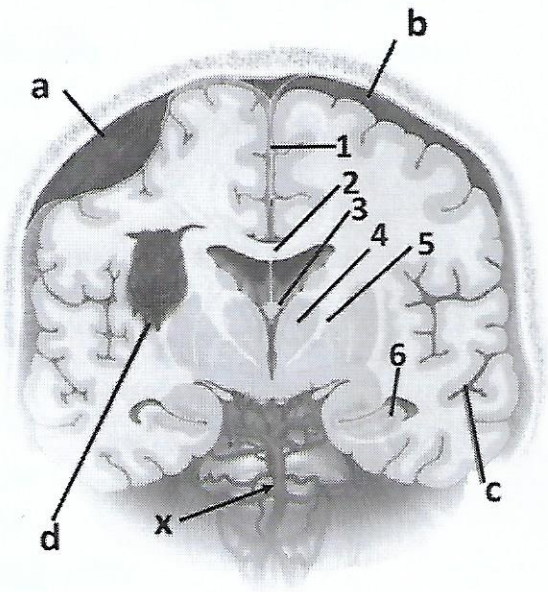

Figure 3

7.1 Different types of intracranial haemorrhages are indicated by letters a, b, c & d

7.1.1 Identity the types 20 Marks

7.1.2 Mention their anatomical site / location 10 Marks

7.1.3 Indicate the source of bleed for each haemorrhage 10 Marks

7.2 Regarding the type 'a' haemorrhage

7.2.1 Give the shape in CT can 10 Marks

7.2.2 Write the anatomical reason for the shape you mentioned in 7.2.1 10 Marks

7.3 Identify the structures indicated by numbers 1 to 6 and give one major function of each structure 30 Marks

7.4 List four (4) structures supplied by 'x' 10 Marks

8. A 10-year-old female child presents with midline swelling in the anterior aspect of the neck region below the hyoid bone. The swelling moves with swallowing and protrusion of the tongue. It was diagnosed as a thyroglossal cyst.

8.1	Write the embryological reasons for the above condition	10 Marks
8.2	Why does the swelling move during swallowing and tongue protrusion?	10 Marks
8.3	Briefly describe the development of the thyroid gland	20 marks
8.4	List two other abnormalities during the development of the thyroid	10 Marks
8.5	Name the hormones secreted by the thyroid gland	10 Marks
8.6	Mention the blood supply of the thyroid gland	20 Marks
8.7	Write notes on the microscopic anatomy of the thyroid gland	20 Marks

9. A 65-year-old mother of five children presented with a lump (mass) at the vulva for one year. Pelvic examination revealed that she had uterovaginal prolapse (Decent of uterus through vagina and come out). She underwent surgery for this condition. Surgery comprises the removal of the uterus and the repair of the perineum.

9.1	Describe the gross anatomy of the uterus	30 Marks
9.2	Mention the supports of the uterus	25 Marks
9.3	Describe the muscles that form the pelvic floor	30 Marks
9.4	List the risk factors associated with uterovaginal prolapse	15 Marks

10. A 65-year-old woman complains of right-hand pain, especially at night, and numbness of her lateral 3 1/2 finger for 6 months. She is suspected to have a nerve problem in her hand and needs to undergo surgery.

10.1	Name the nerve causing the problem mentioned above	10 Marks
10.2	Name the muscles you checked in the hand to confirm the nerve injury mentioned in 10.1	10 Marks
10.3	Describe the course of the above nerve mentioned in 10.1 in the forearm and hand	30 Marks
10.4	What is the anatomical structure involved in the above nerve problem?	10 Marks
10.5	Describe the anatomy of the structure mentioned in 10.4	40 Marks