



UNIVERSITY OF JAFFNA, SRI LANKA
FIRST EXAMINATION FOR MEDICAL DEGREES – MARCH 2026
ACADEMIC YEAR 2023/24
ANATOMY – PAPER II

Date: 03.03.2026

Time: Three hours

Answer ALL TEN Questions

Answer EACH QUESTION in a separate answer book

1. A 42-year-old male sustained a blunt injury to the left upper abdomen following a car accident. Investigations revealed severe haemorrhage secondary to a ruptured spleen, and an emergency splenectomy was planned.
 - 1.1. Define the term “splenectomy.” (10 Marks)
 - 1.2. Explain the reason for severe haemorrhage in splenic injury. (10 Marks)
 - 1.3. Outline the blood supply of the spleen. (20 Marks)
 - 1.4. Name the other organ(s) supplied by the artery that supplies the spleen. (12 Marks)
 - 1.5. Outline the gastrosplenic ligament. (18 Marks)
 - 1.6. Describe the anatomical relations of the spleen. (30 Marks)
2.
 - 2.1. A 48-year-old male was admitted to the emergency unit with a penetrating injury by a knife at the left fourth intercostal space near the sternum. A pericardial window was created to relieve haemopericardium (blood within the pericardial cavity).
 - 2.1.1. Name the chamber of the heart most likely injured in this patient. (10 Marks)
 - 2.1.2. List the structures likely penetrated by the knife in this patient (from outside to inside). (30 Marks)
 - 2.1.3. Name the nerve that lies on the surface of the fibrous pericardium. (10 Marks)
 - 2.1.4. Outline the blood supply of the pericardium. (20 Marks)
 - 2.2. List the causes of Down syndrome and explain the clinical importance of knowing the causes of this genetic disorder. (30 Marks)

3. A 55-year-old man was admitted with a cut injury to the medial aspect of the wrist, and an ulnar nerve injury was diagnosed.
 - 3.1. Outline the course of the ulnar nerve in the forearm and hand. (20 Marks)
 - 3.2. Mention the landmarks for surface marking of the ulnar nerve at the wrist. (10 Marks)
 - 3.3. Name the muscles supplied by the ulnar nerve in the hand. (15 Marks)
 - 3.4. List the sensory areas supplied by the ulnar nerve in the hand. (10 Marks)
 - 3.5.
 - 3.5.1. Name the expected deformity in this patient? (05 Marks)
 - 3.5.2. Explain the anatomical basis of this deformity. (15 Marks)
 - 3.5.3. Name a clinical test that can be used to assess ulnar nerve function in the hand. (05 Marks)
 - 3.5.4. Explain the anatomical basis of the above test. (10 Marks)
 - 3.5.5. Explain the term "Ulnar paradox". (10 Marks)

4. A 75-year-old woman was admitted following a fall and presented with inability to walk. X-ray examination of the hip revealed a complete fracture of the neck of the right femur.
 - 4.1. Outline the blood supply of the head and neck of the femur. (20 Marks)
 - 4.2. What is the most common complication that can occur following a complete fracture of the neck of the femur? (10 Marks)
 - 4.3. Name the strongest extracapsular ligament of the hip joint. (10 Marks)
 - 4.4. Mention two muscles responsible for abduction of the hip joint. (10 Marks)
 - 4.5. Explain the anatomical basis of a "positive Trendelenburg test". (10 Marks)
 - 4.6. List five anatomical relations of anterior and posterior surfaces of the hip joint separately. (30 Marks)
 - 4.7. Explain the clinical reason why fractures of the femoral neck are common in elderly individuals. (10 Marks)

5. A 45-year-old male underwent surgery on the right parotid gland. Subsequently he developed wrinkled forehead, inability to close the right eye, food collection in the right vestibule during chewing, and deviation of the mouth to the left side. The condition was diagnosed as facial nerve palsy.
 - 5.1. Name the opening through which the facial nerve exits the cranial cavity. (10 Marks)
 - 5.2. Mention two muscles supplied by the facial nerve before it enters the parotid gland. (10 Marks)

- 5.3. Outline how parasympathetic secretomotor fibers reach the parotid gland. (20 Marks)
 - 5.4. Name three major structures that pass through the parotid gland. (15 Marks)
 - 5.5. Enumerate the terminal branches of the facial nerve (15 Marks)
 - 5.6. Explain the anatomical basis of the clinical features observed in this patient (wrinkle forehead, inability to close the eye, food collection, mouth deviation). (30 Marks)
6. A 28-year-old pregnant woman delivered her first baby vaginally. An episiotomy was performed before the delivery of the fetal head and repaired afterwards. An episiotomy is a surgical incision made on the perineum to enlarge the vulval outlet and facilitate delivery.
- 6.1. List the layers of the perineum that are cut during an episiotomy. (20 Marks)
 - 6.2. Name the nerve that can be blocked to reduce pain during an episiotomy, and mention its course in the perineum. (30 Marks)
 - 6.3. Outline the boundaries of the urogenital triangle and list its main contents. (15 Marks)
 - 6.4. Outline the boundaries of the anal triangle and list its main contents. (15 Marks)
 - 6.5. Describe the perineal body and its muscular attachments. (20 Marks)
- 7.
- 7.1. List the embryological structures that contribute to the formation of the ventricular septum. (20 Marks)
 - 7.2. Name the most common type of congenital ventricular septal defect. (10 Marks)
 - 7.3. Mention the four key clinical components of Tetralogy of Fallot. (20 Marks)
 - 7.4. Outline the divisions of the primitive heart tube (10 Marks)
 - 7.5. Outline the microscopic anatomy of the cardiac muscle. (20 Marks)
 - 7.6. Describe the histological features of the aorta, including its layers and key structural components. (20 Marks)

8. A 10-year-old boy was admitted with sudden onset of severe right-sided scrotal pain for four hours duration. Examination showed tender scrotal swelling, a high-riding right testis, and absence of cremasteric reflex. A diagnosis of right testicular torsion was made, and emergency scrotal exploration was performed to preserve testicular viability.

During exploration, the surgeon found a tightly twisted spermatic cord and a bluish, enlarged testis in the right side.

- 8.1. List the layers that must be divided to reach the testis during scrotal exploration (from superficial to deep). (20 Marks)
- 8.2. List the structures contained within the spermatic cord that are twisted in this patient. (20 Marks)
- 8.3. Outline the blood supply of the testis. (20 Marks)
- 8.4. Describe the descent pathway of a testis during the embryological development. (20 Marks)
- 8.5. Describe the microscopic anatomy of testis. (20 Marks)

9. A 45-year-old man was brought to the emergency unit after a stab injury to the right paraspinal region of the chest. On examination, he had weakness of the right lower limb, loss of vibration and position sense on the right side below the level of injury, and loss of pain and temperature sensation on the left side starting from a few segments below the lesion.

- 9.1. Mention the meninges that surround the spinal cord. (15 Marks)
- 9.2. List three major ascending tracts of the spinal cord. (15 Marks)
- 9.3. Identify the most likely neurological syndrome this patient is suffering from. (10 Marks)
- 9.4. Explain the anatomical basis for the pattern of motor weakness observed in this patient. (20 Marks)
- 9.5. Explain the anatomical basis for the loss of vibration and position sense on the right side below the level of injury. (20 Marks)
- 9.6. Explain why there is loss of pain and temperature sensation on the left side a few segments below the level of the lesion. (20 Marks)

10. A 68-year-old male presented with abdominal pain radiating to the back. He underwent a CT angiogram (image (figure 1) is given below) for suspected abdominal aortic aneurysm.

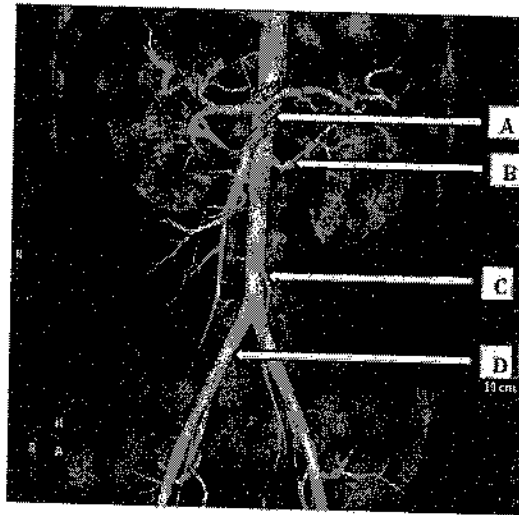


Figure 1 - CT angiogram

- 10.1. Identify the labeled (A-D) structures in the provided CT angiography image. (10 Marks)
- 10.2. Name the common anatomical site of abdominal aortic aneurysm (10 Marks)
- 10.3. Briefly describe the origin, course, and termination of the abdominal aorta. (20 Marks)
- 10.4. List the visceral branches of the abdominal aorta. (30 Marks)
- 10.5. Name the three major openings (with vertebral levels) in the diaphragm and list two structures passing through each of them (30 Marks)