



FACULTY OF MEDICINE UNIVERSITY OF RUHUNA

Third Examination for Medical Degrees (Part II) – December 2015

FORENSIC MEDICINE - PAPER I

Answer ALL FIVE Questions.

9.00 a.m. to 12.00 noon (3 hours)

Answer each PART in a SEPARATE BOOK.

Part A

- 1.
- 1.1 A 4 year-old child was brought to the surgical ward by the grandmother with a history of being assaulted by the father. The mother of the child is employed overseas and the grand mother is taking care of this child and 2 other children. According to the child, the father gets angry very often and hits him. There was a contusion on the left forearm with underlying radius and ulnar fracture. There were multiple injuries and scars on the body.
- 1.1.1 Outline the medico-legal duties of the doctor in this case. (15 marks)
- 1.1.2 Discuss the difficulties in the medico-legal examination of this child. (20 marks)
- 1.1.3 List the investigations you would perform on this child. (10 marks)
- 1.2 The radiologist who reported the radiograph of left forearm suspected non accidental bony injuries and suggested a skeletal survey of the child.
- 1.2.1 List the different non-accidental fractures you expect to see on the skeletal survey and state the mechanisms of causation of these injuries. (20 marks)
- 1.2.2 List 5 differential diagnoses you would consider in this case. (15 marks)
- 1.3 The diagnosis of physical child abuse is confirmed. The grandmother has told the doctor that she cannot take the responsibility of the child. The mother is supposed to return in two years' time.
- 1.3.1 Describe the medico-legal procedure adopted by the doctor to address the above issue. (20 marks)
- 2.
- 2.1 A 50 year-old man was found dead on a foot path in a village. A wire was near the body. One end of the wire was connected to the nearby lamp post and the other end was lying on the ground. On examination of the body rigor mortis was observed on the large and small joints. Purple colour hypostasis was fixed and was observed on the front aspect of the body. Greenish discoloration was observed on the skin over the right iliac fossa.
- 2.1.1 Describe the medico-legal importance of hypostasis in this case. (15 marks)
- 2.1.2 Determine the possible time since death. (15 marks)
- 2.2 During the autopsy the doctor has observed an 'electric mark' on the right thumb. There were no other injuries on the body.
- 2.2.1 State the objectives of performing a complete autopsy in this case. (10 marks)
- 2.2.2 List 2 special dissection procedures you would perform at the autopsy. (10 marks)
- 2.2.3 Briefly describe the steps of one special dissection procedure. (15 marks)

- 2.2.4 Describe the possible features of the electric mark you observe at the autopsy. (20 marks)
- 2.2.5 State the possible mechanisms of death in electrocution. (15 marks)

Part B

- 3.
- 3.1 A group of small children played with some small scarlet colour seeds found from the garden which had a black eye at the hilum. One of these children chewed and swallowed a seed. A few hours later the child developed burning sensation of mouth and severe vomiting.
- 3.1.1 What is the most likely plant involved in this case? (5 marks)
- 3.1.2 State the toxic substances in this plant causing these symptoms. (5 marks)
- 3.1.3 What are the other signs of poisoning you would expect in this patient? (15 marks)
- 3.1.4 What is the pathophysiology of poisoning in this patient? (15 marks)
- 3.1.5 Briefly state how you would treat this patient. (10 marks)
- 3.2 A 4 year-old child was admitted to a teaching hospital with vomiting, abdominal pain and hyperventilation. The parents suspect that the child has ingested some aspirin tablets kept at home. The child was treated in the intensive care unit and died after 4 days.
- 3.2.1 What is the pathophysiology of poisoning of this drug? (15 marks)
- 3.2.2 What are the other signs of poisoning? (10 marks)
- 3.2.3 Briefly state the major steps of clinical management of this patient. (10 marks)
- 3.2.4 Describe the expected post-mortem findings of this case. (15 marks)

Part C

- 4.
- 4.1 The police was informed about a shooting incident in a football stadium situated in a metropolitan city. The spectators in different parts of the stadium were said to be fired by several unidentified gunmen. It was also reported that several bombs also exploded during the fire. The city police had launched a massive operation with armed forces to evacuate the public from the stadium and to disarm the firemen. The emergency medical teams were also called to the scene to assist wounded civilians. The forensic pathology unit of the major teaching hospital was summoned to attend an emergency meeting with the joined operations team.
- 4.1.1 State the major medico-legal issues related to this incident. (5 marks)
- 4.1.2 How would you explain the joined operations team members regarding medico-legal concerns of this investigation? (10 marks)
- 4.1.3 What are the prerequisites for the crime scene examination of this incident? (10 marks)
- 4.1.4 Describe the essential steps of the crime scene examination related to this incident. (15 marks)

- 4.2 The emergency law was declared after initial analysis of the situation and the joined operations team decided to investigate the incident as a mass disaster.
- 4.2.1 How would you define a mass disaster from a forensic pathologist's point of view? (10 marks)
- 4.2.2 Describe the essential components of management of dead in mass disasters. (10 marks)
- 4.2.3 What are the objectives of management of dead in mass disasters? (10 marks)
- 4.2.4 Describe the injury pattern that you would expect in the victims died from this incident. (15 marks)
- 4.2.5 Discuss how you could establish the positive identification of the deceased related to this incident. (15 marks)

5.

5.1 The police have produced a detainee to a district medical officer for a medico-legal examination. Despite the claims of repeated blunt force trauma inflicted by the police officers, the medical officer returned the medico legal examination form (MLEF) with remarks of no injuries. The detainee's clinical condition worsened during the next 24 hours and he was admitted to a tertiary care hospital. Multiple injuries of varying time durations were observed during the second medico-legal examination. The victim had to be dialysed on the 3rd day after admission.

5.1.1 Explain how the victim developed above clinical signs. (10 marks)

5.1.2 Describe the different torture methods adopted by law enforcement authorities and their sequale. (20 marks)

5.1.3 Discuss how you would examine a victim in custody for medico-legal purposes and document findings for courts. (20 marks)

5.2 The victim was managed in a specialised care setting of the hospital for two weeks. The relatives of the victim complained to the Sri Lanka Medical Council (SLMC) about the behavior of the district medical officer and also initiated litigation against him for negligence.

5.2.1 How would you establish the negligence of the doctor involved in this incident? (10 marks)

5.2.2 State the legal provisions against criminal medical negligence in Sri Lanka (10 marks)

5.2.3 How would SLMC perform the disciplinary inquiry in this occasion? (15 marks)

5.2.4 Describe the legal provision against torture in Sri Lanka. (15 marks)