



FACULTY OF MEDICINE UNIVERSITY OF RUHUNA

Third Examination for Medical Degrees (Part II) – September 2014

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. A motor car which was moving with a high speed had a head-on collision with a truck. After the crash the car rolled over. The unrestrained driver was the sole occupant of the vehicle. He was rescued from the crushed vehicle and was taken to the hospital and died 30 minutes later at the Emergency Trauma Center (ETC). There were multiple injuries on the body.

- 1.1. List 5 medico-legal issues related to the case. (10 marks)
1.2. Describe the next medico-legal procedure to be adopted by the MO/ETC. (15 marks)
1.3. Describe the injury pattern you would expect to see on the body at the autopsy. (20 marks)
1.4. The face of the deceased was disfigured due to multiple injuries. How would you confirm the individual identification? (20 marks)

The driver of the truck was produced by the police to the judicial medical officer 2 hours after the incident. The police officer stated that the breathalyzer test done on the driver was positive.

- 1.5. Briefly discuss the law related to the use of Breathalyzer test in Sri Lanka. (20 marks)
1.6. Briefly describe 5 clinical features which would assist you to state that the driver was under the influence of alcohol. (15 marks)

2. Two groups of friends had a fight at a party. A 25-year-old man from one group was stabbed once to the right front chest by another. He walked few feet, collapsed and died. There were numerous blood stains at the scene.

- 2.1. Describe the features of the stab injury on the chest which would help to identify the causative weapon. (25 marks)
2.2. Describe the blood stain patterns you expect to see at the scene and its medico-legal importance. (25 marks)
2.3. List the samples you would collect at the autopsy and briefly describe the collection, storage and dispatch of these samples. (20 marks)
2.4. Briefly discuss the special dissections you would perform at the autopsy. (15 marks)
2.5. The stab injury has penetrated into the chest cavity through the 5th and 6th intercostal space. There was 500 ml of blood in the chest cavity and a stab injury to the right lung. The internal organs were pale. How would you write the cause of death? (15 marks)

Part B

- 3.
- 3.1. A group of grade 3 students from a rural school in the Southern Province had eaten some fruits that were similar to passion fruit from a tree located in a corner of their school garden during the interval. They have developed vomiting, abdominal pain, diarrhoea and dysphagia after several hours.
- 3.1.1 What is the most likely poisonous plant involved in this case? (10 marks)
- 3.1.2 Briefly describe the toxic substances in this fruit and their action? (15 marks)
- 3.1.3 What are the late clinical manifestations of this poisoning? (10 marks)
- 3.1.4 Briefly discuss the acute management of these children. (15 marks)
- 3.2. A 45-year-old paddy cultivating farmer was admitted to a rural hospital with a history of chronic diarrhoea and severe weight loss during the last two months. The doctor had noticed some skin lesions on him and transferred to the General hospital for further investigations and management. The patient developed jaundice and signs of liver failure and renal failure subsequently. He died before a definitive clinical diagnosis is made.
- 3.2.1 Briefly explain the most likely poisoning in this case. (10 marks)
- 3.2.2 Briefly discuss the pathophysiology of this poisoning. (15 marks)
- 3.2.3 What are the findings of external examination? (10 marks)
- 3.2.4 Explain with reasons which post-mortem samples you would send for further analysis. (15 marks)

Part C

4. A house officer was alleged of sexually abusing a 22 year-old pregnant mother (P₁C₀) while performing a cardiotocography (CTG) during the late night in the maternity ward of a tertiary care hospital. However there were no eye witnesses to the incident. Subsequently he was reported to the Sri Lanka Medical Council (SLMC) regarding serious professional misconduct by the family members of the victim. A ministerial inquiry was also initiated.
- 4.1. Briefly describe the sequence of disciplinary proceedings the SLMC would follow against the house officer. (20 marks)
- 4.2. Define and briefly discuss the components of serious professional misconduct. (15 marks)
- 4.3. Identify and discuss the ethical principles the house officer would have breached during the clinical procedure. (15 marks)
- 4.4. Discuss the essential steps of the medico-legal examination of the victim. (15 marks)

Six hours after the above stated incident the mother was examined by the obstetrician of the unit and detected foetal distress on her. She was subjected to an emergency caesarian section. An asphyxiated baby boy was delivered but he could not be survived despite resuscitative attempts. The house officer was charged for committing a sexual offence by the police. The house officer, the obstetrician and the hospital were charged for medical negligence by the relatives of the mother.

- 4.5. How would you establish medical negligence in this case? (10 marks)
- 4.6. Briefly discuss the content of sexual offences the house officer could be charged according to the Sri Lankan criminal law. (15 marks)
- 4.7. Briefly state how would you establish the maturity of the infant at the autopsy. (10 marks)
5. A 28-year-old male arrested by police for causing disturbance to public in the road was brought to the police post of a teaching hospital to be produced before a judicial medical officer. He was alleged to have a past history of drug abuse. While in the police post under restraint, the detainee became violent, verbally abusive and broke the thick glass window fixed to one of the side walls by impacting his head on the window pane. His movements became uncontrollable and the police had to seek medical attention in view of sedation.
- 5.1. What is the most likely clinical diagnosis of this case? (10 marks)
- 5.2. Briefly describe the diagnostic criteria and other clinical features associated with this condition. (20 marks)
- 5.3. Briefly describe the essential steps of his medico-legal examination and further management. (15 marks)
- Before medical officers turn out, a police officer had tried neck restraint on him to immobilize and the detainee was collapsed on the floor soon afterwards. He was rushed to the emergency treatment unit but could not be revived despite rapid resuscitative measures.
- 5.4. How would you explain to the death investigator regarding the risks associated with restraining the detainees? (20 marks)
- 5.5. Briefly discuss the essential steps of the death investigation procedure followed in this case. (15 marks)
- 5.6. How would you explain the mechanism of death? (10 marks)
- 5.7. Outline the value of special dissections carried out during the autopsy of the detainee to arrive at a cause of death. (10 marks)