



**Faculty of Medicine University of Ruhuna**  
**Third Examination for Medical Degrees (Part II) – July / August 2018**

**Forensic Medicine Paper I**

Tuesday 31<sup>st</sup> July 2018

9.00 am to 12.00 noon  
**Three hours**

Answer **ALL FIVE** questions.  
Answer each **PART** in a **SEPARATE** book.

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**Part A**

1. A 35-year-old previously healthy man was admitted to the surgical ward with multiple injuries. He was in an unconscious state. The doctor has observed multiple contusions on his body.

- 1.1 Define contusions. (10 marks)  
1.2 Briefly describe the medico-legal importance of contusions. (20 marks)  
1.3 List the possible complications of contusions. (10 marks)

The CT scan - head of the patient showed right parietal bone fracture with extradural haemorrhage and a craniotomy was performed.

1.4 What is the most possible category of hurt? Give reasons. (15 marks)

He was discharged from the hospital and died 2 weeks after the incident at home.

- 1.5 What are the possible causes of death of this person? (15 marks)  
1.6 Write the major steps of dissection of the brain at the autopsy. (15 marks)  
1.7 What are the special dissections you would perform on this body at the autopsy? Give reasons. (15 marks)

2. An unidentified middle aged woman was brought to the hospital with chest pain for one day. She died at the OPD.

- 2.1 Describe the inquest procedure in this patient. (15 marks)  
2.2 What is the importance of conducting a complete autopsy on this body? (15 marks)  
2.3 How you would help the investigating police to confirm the identification? (20 marks)

The autopsy findings include 450g heart with 90% occlusion of the left common coronary artery. There was a pale area on the anterior wall of the left ventricle.

- 2.4 What is the most likely cause of death? (15 marks)  
2.5 Describe the most likely histological findings of the sections obtained from the above area. (20 marks)  
2.6 What are the other investigations you would perform? Give reasons for your answer. (15 marks)

## Part B

- 3.
- 3.1 A 54-year-old man was found dead by his wife in his car which was parked inside the garage. At the time of recovery, the car engine was still running. All the windows were shut, however one end of a rubber horse was found inside the car with the other end connected to the exhaust pipe.
- 3.1.1 List 05 medico-legal issues related to this incident. (10 marks)
- 3.1.2 State the most likely cause of death. (05 marks)
- 3.1.3 Describe the possible external and internal post-mortem features that you would expect to see on this body. (20 marks)
- 3.1.4 List the different samples that you would collect during the post-mortem examination and describe how would you store and dispatch them. (15 marks)
- 3.2
- An eight year old boy was brought to the casualty ward with a history of consuming a fruit similar to "Rambutan" while playing at the nearby jungle. On admission, he had altered sensorium, hyperpyrexia, dilated pupils and dryness of throat and mouth.
- 3.2.1 What is the most likely poisonous plant involved in this case? (05 marks)
- 3.2.2 State the main toxic substance in this plant causing above symptoms. (05 marks)
- 3.2.3 Briefly describe the mechanism of action of this toxin. (15 marks)
- 3.2.4 What are the other clinical features you would expect to observe in this patient? (10 marks)
- 3.2.5 Briefly describe the major steps of clinical management of this patient. (15 marks)

## Part C

4. An adult male is brought to the OPD of a Teaching hospital by his family members with a history of being unresponsive in the morning following sleep in the previous night. It was stated that on the previous day evening the deceased was found fallen on the road on his way to home and subsequently assisted by family members to reached home. He had no major injuries due to fall and had dinner at home before going to sleep according to wife. He was pronounced dead on admission following a brief period of resuscitation. The deceased was a retired state officer and was said to be alcohol dependant towards latter part of his life.
- 4.1 State 5 major medico-legal duties of the MO/OPD in this case. (10 marks)
- 4.2 Briefly discuss the main criteria involved in confirmation of brain death. (10 marks)
- 4.3 State five important questions that you would ask at the inquest from relatives if you are the Inquirer into Deaths. (05 marks)

- 4.4 Briefly describe the post-mortem findings of chronic alcoholism. (10 marks)
- 4.5 Discuss the value of ancillary investigations in determining chronic alcoholism. (10 marks)

During the autopsy the JMO found that the deceased had significant bleeding over the strap muscles bilaterally. His major vessels at the either side of the neck were intact. A fracture dislocation at the cervical column was observed at C4/C5 level. The Inquirer and the police officer were informed about this observation and the relatives who were present at the inquest were reinterrogated. It was then revealed that he was found sleeping across the wooden bed he sleeps usually.

It was also alleged that there were longstanding disputes within the family regarding division of property amongst children and on that day, the deceased was hit on the neck and thrown to the bed by the eldest son. A retrospective scene visit was arranged urgently.

- 4.6 Explain the most likely mechanism for bleeding over strap muscles? (15 marks)
- 4.7 Briefly describe the range of neck injuries observed in relation to possible neck movements of an adult person. (20 marks)
- 4.8 Describe how fracture dislocation of C4/C5 of cervical vertebral column could occur. (20 marks)
5. A group of foreign tourists returning from a restaurant after dinner said to have sustained injuries following a brawl with a group of 'beach boys' at the beach of a popular tourist destination in deep south. The group of tourists comprised of two adult males and three adult females. The police were informed about the incident and the victims were rushed to the nearby hospital. It was revealed at the initial assessment that two males have received multiple blunt and sharp force injuries and three females were sexually assaulted. As the facilities of the hospital were not sufficient for emergency management of the victims they were transferred to the nearest Teaching Hospital in the region with medical and nursing attention. One male was in a critical condition but managed to make a statement to the medical officer in the ambulance before succumb to his injuries during the transfer.
- 5.1 What are the medico-legal issues of this case? (05 marks)
- 5.2 State five major advices that you would provide to SOCO prior to the alleged crime scene examination of this case. (15 marks)
- 5.3 How would you record the statement of the patient with critical injuries during transfer and state its medico-legal importance. (10 marks)
- 5.4 Discuss the best possible way of confirming the death of the deceased victim. (15 marks)

The autopsy of the deceased foreigner was held at the teaching hospital on the next day. It was also revealed that all three adult females had multiple blunt force injuries and they had penetrative injuries in the external sexual organs. The police have also produced the alleged perpetrators to the JMO for medico-legal examination on the same day afternoon. It was told that police have recovered a large amount of 'ecstasy' tablets in possession of alleged perpetrators during the search.

- 5.5 Briefly describe 5 major areas of concern that you would address when performing the autopsy of the deceased foreigner. (10 marks)
- 5.6 State five important steps of the clinical forensic examination of female victims. (05 marks)
- 5.7 Briefly describe the importance of special investigations performed during medico-legal examinations of female victims. (10 marks)
- 5.8 Describe three legal provisions which could be related to this scenario of adult sexual offences in Sri Lanka. (15 marks)
- 5.9 Briefly describe five essential steps that should be followed during the medico-legal examination of alleged perpetrators. (15 marks)