

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**MASTER OF SCIENCE IN MEDICAL TOXICOLOGY EXAMINATION**

**Date :-** 26<sup>th</sup> February 2015

**Time:-** 1.00pm – 4.00pm

**STRUCTURED ESSAY QUESTION (SEQ) PAPER**

Answer **all four (04)** questions in Part A.

Answer any **two (02)** out of **five (05)** questions from Part B.

Answer each question in a separate book.

**PART A**

1. An 18 year old girl weighing 38 kg was brought to a hospital at 9 pm with a history of drug overdose. She has taken 8 tablets of paracetamol around 11 am and 10 more tablets around 7 pm on the same day. With the second dose of paracetamol she has also taken 20 tablets of amitriptyline (25mg each). She has a history of epilepsy and is on phenytoin sodium 200mg twice a day for the past 2 years.

On admission her Glasgow Coma Scale (GCS) was 13/15. Blood pressure was 110/60 mmHg and pulse rate was 100bpm. Her lungs were clear and the abdominal examination was normal. Nervous system examination revealed exaggerated tendon reflexes.

- 1.1. Discuss the gastrointestinal decontamination of this patient. (20 marks)
- 1.2. Discuss her risk level for hepatotoxicity. (20 marks)
- 1.3. Name the antidote you would administer at this stage with its route of administration? (10 marks)
- 1.4. Explain the pharmacological basis for your answer in 1.3 above. (20 marks)
- 1.5. What is the significance of exaggerated tendon reflexes found in this patient? (10 marks)

Contd...../2-

1.6. Explain the importance of doing the following investigations in this patient

1.6.1. Electrocardiogram (ECG)

1.6.2. Arterial blood gas analysis (ABG)

(20 marks)

2. Write short notes on :

2.1. The management of kaneru/yellow oleander poisoning. (25 marks)

2.2. The management of Russell's viper envenoming. (25 marks)

2.3. The chronic disabilities caused by snakebite. (25 marks)

2.4. Prevention of snakebite in Sri Lanka. (25 marks)

3. A 43 year old woman is admitted to a hospital 6 hours after ingesting 40 g of carbamazepine. She was comatose with a GCS 6/15 but was haemodynamically stable on admission.

3.1. Discuss the value of gastric decontamination in this patient on admission (30 marks)

She later developed generalized seizures and her respiratory and neurological condition worsened.

3.2. Briefly explain the management of this patient at this stage. (30 marks)

3.3. Discuss the methods of elimination of carbamazepine that could be considered in this patient (40 marks)

Contd.../3-

4. A 36 year old woman presents 2 hours after drinking an unknown amount of dimethoate concentrate. She had no significant medical problems in the past. On arrival, her GCS is 9/15. Her clothes are soaked with the spilled pesticide and vomitus. Her pulse rate is 130 bpm, BP 100/80 mmHg. There are scattered rhonchi throughout her chest. Her mouth contains some vomitus. She is moving her limbs and the reflexes are depressed and there were muscle fasciculations.

- 4.1. Describe the initial management of this patient. (40 marks)
- 4.2. Describe the complications you would expect in this patient. (30 marks)
- 4.3. List the factors that will determine the prognosis of this patient. (15marks)
- 4.4. List the factors that would determine the toxicity of an organophosphorus compound. (15 marks)

### PART B

5. A 38 year old Sri Lankan female who returns from a nearby country after a two day visit was found unconscious at the airport. She was brought to the hospital. Her respiration was poor with a rate of 8 breaths per minute and had miosis and central cyanosis.

- 5.1. Describe the initial management of this patient. (30 marks)
- 5.2. List four (04) differential diagnoses you would consider in this patient giving reasons. (40 marks)

Further physical examination of this patient revealed some "packets" in her vagina.

- 5.3. What is the most likely diagnosis? (10 marks)
- 5.4. Describe briefly the further medical management of this patient. (20 marks)

6. A 15 year old girl was admitted to a medical ward in an unconscious state with a history of poisoning. Her mother brought an empty pesticide bottle found next to her.

6.1. Discuss the medico-legal issues the ward medical officer should consider. (40 marks)

6.2. What are the samples the medical officer should collect for analysis? (10 marks)

She died 2 hours after admission.

6.3. What samples should the judicial medical officer take at the post-mortem examination? (20 marks)

6.4. As many deaths occur in this hospital following ingestion of this pesticide, the medical officer informs the Registrar of Pesticides about it.

What steps can he take to reduce the mortality from this pesticide? (30 marks)

7. Air pollution is one of the leading causes of morbidity and mortality.

7.1. List five (05) air pollutants. (10 marks)

7.2. Give two (02) sources for each of the air pollutants listed above. (15 marks)

7.3. Describe how air pollution has contributed to climate change. (25 marks)

7.4. Describe the measures taken to control air pollution in Sri Lanka (50 marks)

8. Exhaust fumes from the generator room have leaked into a cinema hall. Several people have collapsed inside the Cinema.

- 8.1. State the likely toxic gas and describe the signs and symptoms you would expect. (40 marks)
- 8.2. What advice would you give to the rescue team. (30 marks)
- 8.3. Outline your plan of management of this incident. (30 marks)

9. You have been appointed to develop a Regional Poison Centre in your province. Two doctors and two research officers are allocated as staff.

- 9.1. Describe the role of a Poison Centre. (40 marks)
- 9.2. Outline a training programme for the Poison Centre staff. (30 marks)
- 9.3. How would you plan a public information service to minimize poisoning in the community. (30 marks)