

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

**MASTER OF SCIENCE IN MEDICAL TOXICOLOGY**  
**FINAL EXAMINATION**  
**AUGUST 2011**

**Date :** 30<sup>th</sup> August 2011

**Time :** 1.00 p.m. – 4.00 p.m.

**SEQ PAPER**

**PART A**

**Answer all four (04) questions.**

**Answer each question in a separate book.**

1. A 25 years old woman is admitted to the emergency department with nausea, vomiting and right upper hypochondrial pain. She admits that she ingested a large dose of paracetamol but she refuses to give further history.

On examination she has mild drowsiness, BP 110/70 mmHg, pulse 98 bpm. There is mild right hypochondrial tenderness. Facilities to do paracetamol levels are available.

1.1 Describe the mechanism of toxicity of paracetamol. (20 marks)

1.2 Explain how you would assess the risk of toxicity in this patient. (25 marks)

A 35 year old woman is admitted 2 hours following ingestion of 40 tablets of standard release paracetamol. Facilities to do paracetamol levels are available .

1.3 Explain why gastric decontamination is ineffective in this patient. (15 marks)

1.4 Describe the management of this patient within the next 24 hours. (40 marks)

2. A 38 year old farmer is brought to the emergency unit with a history of unknown poisoning. He was unconscious with GCS of 5. His pupils were pin point. The mouth was full of frothy secretion and there was no evidence of head injury. The pulse rate was 60 bpm and BP was 90/60 mmHg.

2.1 What is the most likely diagnosis ? (10 marks)

2.2 What other clinical findings are expected in this patient ? (20 marks)

2.3 Describe the initial management of this patient. (30 marks)

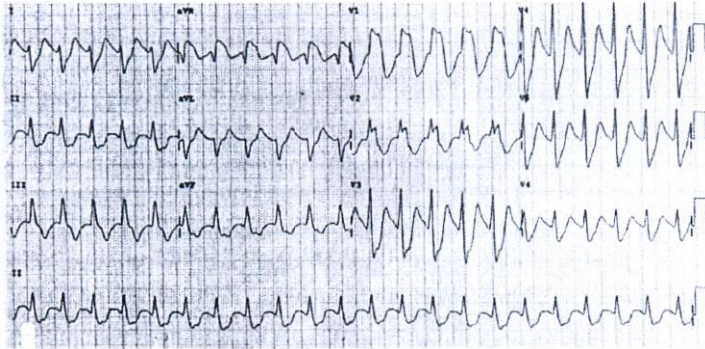
The patient recovered initially. Later he developed fever and was confused.

2.4 List possible causes for this development and outline your management. (20 marks)

Patient was extubated on day 2 and was recovering well. On day 3 he developed proximal muscle weakness and shortness of breath.

2.5 What is the most likely diagnosis and how would you manage this patient ? (20 marks)

3. A 50 year old man was found unconscious after possible overdose. He was on amitriptyline 75 mg OD alprazolam 0.5mg OD. Nifedipine SR 20mg BD and Metformin 500mg TDS. Clinical examination revealed a pulse rate of 120/minute, remainder of examination was normal. The ECG is as follows:



- 3.1 Which of the above drugs could account for this ECG abnormality (10 marks)
- 3.2 Outline the immediate management of this patient. (40 marks)
- 3.3
- 3.3.1 What other complications could arise ? (20 marks)
- 3.3.2 State the management of each of the complications mentioned in 3.3.1 (20 marks)
- 3.4 The patient clinically recovered after four days.  
What other steps are important in the management of this patient ? (10 marks)
4. A 30 year old female is admitted with unknown snake bite to a hospital in Northern Sri Lanka
- 4.1 Outline important clinical features that would suggest a Krait bite. (30 marks)
- A clinical diagnosis of Krait bite was made
- 4.2 Describe the immediate management of this patient. (40 marks)
- 4.3 Briefly describe the composition and action of krait venom. (30 marks)

## PART B

**Answer only two (02) out of five (05) questions.**

**Answer each question in a separate book.**

- 5.
- 5.1 Define the measures of disease frequency and discuss their usefulness in measuring burden of pesticide poisoning. (50 marks)
  
  - 5.2 Describe the measures in determining acute toxicity of a chemical. (25 marks)
  
  - 5.3 Discuss the statement ‘occupational pesticide poisoning is common in Sri Lanka though less documented’. (25 marks)
6. A 46 year old man was brought to the casualty for abnormal behavior. He was in the remand for last three days for a suspected robbery, and was in “good health” according to the prison officers on admission their custody.
- He was having insomnia for the last few days and seeing snakes crawling on the walls. He is disoriented in time and place, sweaty, with coarse tremors of limbs and has bilateral parotid swelling with erythematous palms. His pulse is 108 bpm and the blood pressure is 160/100 mmHg. The liver is 3 cm below the costal margin.
- 6.1 What is the most likely diagnosis ? (10 marks)
  
  - 6.2 Outline the management of this patient. (40 marks)
  
  - 6.3 What imminent complication he is likely to get ? (20 marks)
  
  - 6.4 State the criteria for diagnosing dependency ? (30 marks)

- 7.
- 7.1 What is a pesticide ? (10 marks)
- 7.2 Explain the role and the activities of the Registrar of Pesticides in Sri Lanka. (20 marks)
- 7.3 A 15 year old girl is admitted with poisoning to a medical ward.
- 7.3.1 List medico-legal issues. (15 marks)
- 7.3.2 List ethical issues. (15 marks)
- 7.4 Explain the factors that influence the effect of a pesticide on the human body. (20 marks)
- 7.5 Outline the steps taken in Sri Lanka in the last three decades to reduce the rising mortality from pesticide poisoning. (20 marks)
- 8.
- 8.1 Outline the main components of drug development. (30 marks)
- 8.2 Describe the phases of clinical development of a drug. (40 marks)
- 8.3 State the criteria for granting therapeutic exemption for athletes to use substances prohibited in sports competitions. (30 marks)
9. A cylinder of chlorine gas used for the chlorination of drinking water ruptures and releases gas into the air. Several people nearby are exposed to the fumes.
- 9.1 What type of injuries would you expect in the victims? (20 marks)
- 9.2 Describe the step taken to rescue these people. (40 marks)
- 9.3 Describe the first aid and medical management that should be provided. (40 marks)