

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (EMERGENCY MEDICINE) EXAMINATION
NOVEMBER/DECEMBER 2023

Date:- 21st November 2023

Time:- 9.00 a.m. - 12.00 noon

STRUCTURED ESSAY QUESTION PAPER

Answer **all ten (10)** questions.

Answer each question in a separate book.

1. A 35-year-old motorcyclist is brought by paramedics to the ED after a head on collision. He has extensive facial injuries and blood-stained secretions coming from the nose and mouth. His breathing is noisy, and he is restless.

His parameters are:

SpO ₂	92% on air
HR	112 bpm
BP	100/60 mmHg

He is secured to a spinal board and a semirigid cervical collar has been applied. A face mask with high flow oxygen is in place.

- 1.1. What factors make you anticipate a difficult airway in this scenario? (25%)
- 1.2. Outline the sequential measures you will take to secure the airway. (50%)

After stabilisation in the primary survey, he is prepared for transfer to a neurosurgical centre.

- 1.3. State the measures required to minimise secondary brain injury. (25%)

2. A motorcyclist presents to the ED following a road accident. Major thoracic and abdomino-pelvic haemorrhage are excluded during the primary survey. He has been resuscitated and is haemodynamically stable.

His parameters are:

SpO ₂	97% on air
HR	110 bpm
BP	90/60 mmHg

A closed tibial plateau fracture is found during the secondary survey. The family of the patient is concerned about the possibility of a major amputation of the fractured extremity.

- 2.1. Outline the pathogenesis of the two (02) conditions that may result in an amputation in this scenario. (20%)
- 2.2. Outline the clinical features of the two (02) conditions stated above. (20%)
- 2.3. Indicate the limitations of interpreting the clinical features stated in 2.2. (30%)
- 2.4. Outline the management of the affected extremity. (30%)
3. A 33-year-old man is transferred from a peripheral hospital with severe traumatic brain injury following a road traffic crash. He is intubated and ventilated. In the ED, his GCS is 3/15, pupils are size 6 and non-reactive. There is no spontaneous breathing.
- 3.1. What preconditions should be fulfilled to commence brain stem death testing? (30%)
- 3.2. State the bedside tests done to confirm brain stem death. (40%)
- 3.3. Outline the principles of care of a brain-dead person awaiting consideration for organ retrieval. (30%)

Contd..../3-

4. A 64-year-old man presents to the ED with acute, severe, tearing type chest pain radiating to the back. He has diabetes, hypertension, dyslipidaemia and is a heavy smoker. He is on metformin, amlodipine and rosuvastatin.

His parameters are:

Temperature	37°C
BP	190/120 mmHg
HR	130 bpm
RR	26 per minute
SpO ₂	95% on air

- 4.1. State the most likely diagnosis. (10%)
- 4.2. Outline the investigations with expected findings to arrive at this diagnosis. (15%)
- 4.3. Outline the immediate management. (25%)

Two hours later, he becomes cold and clammy with a HR of 150 bpm, BP of 90/60 mmHg and an elevated JVP.

- 4.4. What is the most likely complication? (10%)
- 4.5. State the investigation and expected findings that will confirm this complication. (15%)
- 4.6. Outline the initial management of this complication. (25%)

5. A 65-year-old woman with diabetes presents to the ED with severe odynophagia and fever of 48 hours. She remembers a fish bone getting stuck in her throat 5 days ago. She has a stiff neck with intense tenderness in the upper part, but no swelling or redness. The oral cavity and throat appear normal.

Her parameters are:

Temperature	39°C
HR	96 bpm
BP	90/60 mmHg
RR	22/minute
SpO ₂	98% on air
Capillary blood sugar	256 mg/dL

- 5.1. State the most likely diagnosis. (20%)
- 5.2. Outline the initial assessment and management. (80%)

Contd..../4-

6. A 54-year-old man presents to the ED with cough, chest pain and worsening breathlessness of 2 days. He has diabetes, hypertension, ischaemic heart disease and stage IV CKD. His compliance with medication has been poor. He weighs 110 kg.

His parameters are:

HR	110 bpm
BP	130/80 mmHg
RR	34/min
SpO ₂	84 % on air
Lungs	Bi-basal crackles

- 6.1. List the four (04) most likely diagnoses. (10%)
- 6.2. Discuss the clinical features that will help to differentiate between the diagnoses above. (30%)
- 6.3. Outline the POCUS findings for each of the diagnoses stated above. (25%)

He is started on CPAP 10 cmH₂O. Since there is no clinical improvement, a decision is made to intubate.

- 6.4. List three (03) problems you anticipate during intubation and immediately afterwards. (15%)
- 6.5. State the pros and cons of two (02) pharmacological agents you would use for intubation in this scenario. (20%)

7. A 23-year-old substance abuser is brought to the ED by prison guards with a history of drowsiness of one day. He has had fever and a generalized haemorrhagic rash for 3 days. He had a post-traumatic splenectomy several years ago.

His parameters are:

Temperature	39°C
HR	124 bpm
BP	80/50 mmHg
RR	30 per minute
SpO ₂	94% on air
GCS	12/15

- 7.1. State the most likely diagnosis. (15%)
- 7.2. Outline the initial management. (40%)
- Thirty (30) minutes after resuscitation he develops recurrent generalized seizures.
- 7.3. List three (03) likely causes for the seizures. (15%)
- 7.4. Outline the management of the seizures in this patient. (30%)

Contd.../5-

8. A 6-year-old boy is brought by his mother with lethargy. He gives a history of polyuria, increased thirst and weight loss over the past week. He is dehydrated and drowsy but responds to commands and has a low volume pulse.

- 8.1. State the most likely diagnosis. (10%)
 8.2. List the investigations you will perform giving reasons. (40%)
 8.3. Outline the initial management. (50%)

9. A 75-year-old woman presents with colicky, central abdominal pain of 3 days duration. She had vomiting and had not opened bowels for 3 days. She has diabetes and coronary artery disease and is on clopidogrel. Her oral mucosa is dry and the conjunctivae are pink. The abdomen is distended and non-tender. Bowel sounds are exaggerated. The rectum is empty.

Her parameters are:

HR	90 bpm
BP	100/80 mmHg
RR	18/min

- 9.1. State the most likely diagnosis. (10%)
 9.2. State the plain radiographic study and its findings that will confirm the diagnosis. (10%)
 9.3. List three (03) likely underlying causes for the diagnosis in 9.1. (10%)
 9.4. Describe her initial management in the ED. (25%)

She is kept in the ED under observation.

- 9.5. What complication in this patient will necessitate urgent surgical intervention? (10%)
 9.6. State the clinical features and investigative findings that will be suggestive of this complication. (20%)
 9.7. Outline the key steps in the preparation of this patient for urgent surgery. (15%)

10. A 22-year-old woman presents to the ED with severe lower abdominal pain of 5 days. She has a blood-stained vaginal discharge and a period of amenorrhoea of 8 weeks. Her urine HCG is positive.

- 10.1. State three (03) likely diagnoses. (15%)
 10.2. How will you differentiate (using clinical features and investigations) between the diagnoses stated in 10.1? (40%)
 10.3. Outline the management of each of the conditions stated in 10.1. (45%)