

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

**MD (EMERGENCY MEDICINE) EXAMINATION – SEPTEMBER 2016**

**Date :- 19<sup>th</sup> September 2016**

**Time :- 1.00 p.m. – 4.00 p.m.**

**STRUCTURED ESSAY QUESTION PAPER**

Answer all ten (10) questions.

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

1. A 30 year old female presents to the Emergency Department after being struck by a car whilst crossing the road. She complains of severe right chest pain and shortness of breath.
  - 1.1. List the members of the trauma team you would assemble to manage this patient, listing the key roles of each team member. (45%)
  - 1.2. List three (03) potential immediately life-threatening chest injuries in this patient. (15%)
  - 1.3. For each potential chest injury, list four (04) key features on initial clinical examination. (20%)
  - 1.4. For each potential chest injury, list four (04) key immediate interventions (20%)

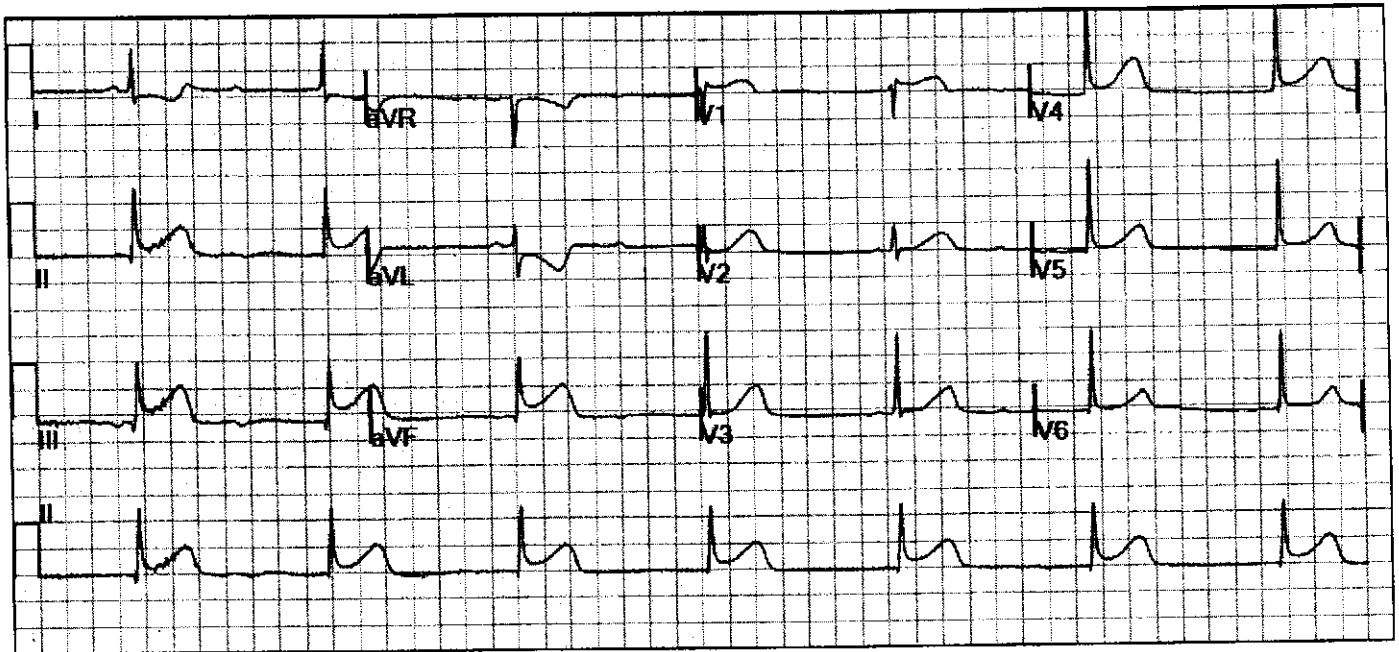
2. While suturing a lower limb laceration in an adult conscious patient in the Emergency Department, your colleague sustains a deep needle stick injury to his right thumb.
  - 2.1. List three (03) steps in the immediate management of this situation giving reasons. (25%)
  - 2.2. After the immediate management, indicate what further actions are to be followed with regards to the
    - 2.2.1. patient (two actions)
    - 2.2.2. doctor (two actions) (40%)
  - 2.3. List three (03) treatment options available, if exposure to blood borne viruses is suspected or confirmed? (25%)
  - 2.4. Give two (02) precautions that this doctor should take following high risk exposure. (10%)
  
3. A 36 year old male sustains facial injuries in a motorcycle accident. On arrival at the Emergency Department he is conscious and alert, with an oxygen saturation of 87% on air due to an obstructed airway.
  - 3.1. List five (05) possible mechanisms of airway obstruction in this patient? (25%)
  - 3.2. Outline a classification for facial fractures. (15%)
  - 3.3. List four (04) additional factors which can make airway management difficult in this patient? (20%)
  - 3.4. Discuss four (04) techniques available to secure a definitive airway. Give one (01) advantage and one (01) disadvantage of **each technique** that you mentioned. (40%)

4. A 60 year old male presents to the Emergency Department with sudden onset severe and persistent pain of the right leg during the last three hours. His leg is cold with no abnormal neurological signs. Distal pulses are absent. The calf is neither swollen nor tense.
- 4.1. List two (02) pathological causes for the above presentation (10%)
  - 4.2. Outline how the history and examination will help you to arrive at a diagnosis. (40%)
  - 4.3. List the imaging methods that will confirm the diagnosis. (10%)
  - 4.4. Outline the initial management. (40%)

5. A 45 year old man presents to the Emergency Department of a Teaching Hospital with a history of crushing central chest pain, sweating and vomiting for 30 minutes. The pain was of sudden onset and radiated to neck and jaw area. It was also associated with transient numbness and weakness of left upper limb.

He has a history of bicuspid aortic valve detected in childhood. There are no other cardiac risk factors. He is a teetotaler and a non smoker.

His ECG on admission is shown below.



- 5.1. What is the ECG diagnosis? (10%)

His clinical examination reveals a pulse rate 45 per minute, regular and low volume. Auscultation reveals a systolic murmur at the aortic area and early diastolic murmur at the upper parasternal edge. Lung bases are clear. No focal neurological signs are noted at the time of examination.

- 5.2. What further clinical signs would you look for in this patient? (20%)
- 5.3. List the imaging investigations you would request to confirm the diagnosis. (20%)
- 5.4. What is the most likely final diagnosis? (20%)
- 5.5. What is the definitive management of this patient? (30%)

6. A 30 year old primigravida presents at a period of gestation of 28 weeks complaining of a severe frontal headache and nausea of four hours duration. She was previously normotensive. On examination, she is alert. The heart rate is 76 per minute and the blood pressure 180/120 mmHg. '
- 6.1. List the clinical features you would elicit in this woman. (20%)
- 6.2. Describe the steps you would take in the management of this woman over the next hour. (40%)
- 6.3. List the parameters to be monitored in this woman, with the desired target values. (20%)
- 6.4. The woman develops a generalized tonic-clonic seizure after one hour of commencing first line treatment. At that point, her blood pressure is 150/95 mmHg and the urine output is 30 ml.  
List what steps you would take to manage the woman at that point. (20%)

7. A 79 year old female with long standing diabetes is brought to the Emergency Department in a drowsy and non-responsive state. She had had poor blood sugar control over the previous 6 months and had been unwell with frequent urination in the previous week with anuria for 18 hours.

On examination, she had dry mucosae, poor skin turgor, Glasgow Coma Scale 11/15, Peripheral pulse 120/minute low volume, Systolic blood pressure 80 mmHg, respiratory rate 16/minute. Body weight 70 kg (lost 2 kg).

Blood biochemistry –

		Normal
Random blood sugar	630 mg/dl (35mmol/L)	<200 (11)
Blood urea	25 mmol/L	2.5 – 7.1
Serum sodium	126 mmol/L	135 - 145
Serum potassium	3.2 mmol/L	3.5 - 5.5
Chloride	88 mmol/L	98 - 106
Bicarbonate	20 mmol/L	23 - 28

- 7.1. What is the most likely diagnosis? (10%)
- 7.2. Identify four (04) key pathophysiological abnormalities in this patient (20%)
- 7.3. Outline how you manage this patient in the first four hours? (50%)
- 7.4. List three (03) complications that can occur in this patient. (20%)

8. A one and half year old is admitted with vomiting and diarrhoea of two days duration. On examination the child was drowsy with cold peripheries and weak pulses. His weight is 15 kg.

8.1. What clinical features would you look for to confirm your diagnosis of severe dehydration. (20%)

8.2. List four (04) important steps in his management? (20%)

Ten minutes later despite ongoing management the child became unresponsive. There was no breathing. Pulse could not be felt.

8.3. List the four (04) main steps in resuscitation. (20%)

8.4. After two cycles of resuscitation there was no improvement. Normal cardiac rhythm was detected in the monitor, but there was no pulse.

8.4.1. What is this clinical condition? (10%)

8.4.2. List the potential causes for this condition in this child. (20%)

8.5. The intravenous access has got tissue. What are your options for regaining access? (10%)

9. A 23 year old female, student from the USA, is brought with acute severe breathlessness and palpitations. She is a non-smoker, previously well, takes the contraceptive pill and arrived in Sri Lanka a week before. She is afebrile, well hydrated, drowsy (GCS 12/15) and cyanosed. Pulse low volume 110/minute; Blood Pressure 90/65 mmHg; Oxygen saturation 86% on room air, Respiratory Rate 30/minute; heart, lungs and abdomen are clinically normal.

9.1. Write the most likely diagnosis giving your reasons. (20%)

9.2. Outline your management. (60%)

She does not improve within 30 minutes and her systolic blood pressure drops further to 70 mmHg.

9.3. Describe your next steps in management. (20%)

10. A 30 year old male is brought to the emergency department after being found behaving in a bizarre fashion on a busy road. He was witnessed to be staggering, fell to the ground and has a forehead haematoma. On arrival he smells of alcohol and is threatening physical violence to the Emergency Department staff.

10.1. List the priorities of your initial management. (30%)

10.2. Discuss your approaches (including pharmacological options) to preventing this patient from causing harm to himself and the staff. (40%)

After a period of pharmacological sedation, the patient becomes alert and demands to leave.

10.3. List your criteria for allowing the patient to depart. (30%)



