

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (EMERGENCY MEDICINE) EXAMINATION – OCTOBER 2017

Date:- 23rd October 2017

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 55-year-old male is brought to the emergency department following a road traffic accident with a closed injury to the left lower limb. He is complaining of severe pain in the limb. The X ray shows an angulated tibial mid shaft fracture. The patient is otherwise stable with no immediately life threatening injuries.
 - 1.1. Briefly describe the emergency management of the tibial fracture. (15 marks)
 - 1.2. List five (05) signs and symptoms that will indicate a diagnosis of acute limb compartment syndrome. (25 marks)
 - 1.3. Briefly explain the pathophysiology of acute limb compartment syndrome. (20 marks)
 - 1.4. After initial stabilisation, list five (05) steps in your immediate management of acute limb compartment syndrome. (25 marks)
 - 1.5. List three (03) possible complications of acute limb compartment syndrome. (15 marks)

2. A 3-year-old boy was rescued by army personnel following drowning during recent floods. CPR was commenced by army personnel at the site and the boy was brought to the ETU in your hospital within 30 minutes. On arrival he was unresponsive and his pulse could not be felt. However, when he was connected to the monitor there was a cardiac rhythm with a heart rate of 40/minute.
 - 2.1. Briefly describe the immediate steps in the management. (40 marks)
 - 2.2. List six (06) prognostic factors for long term outcome in this patient. (30 marks)
 - 2.3. List five (05) core rewarming methods in severe hypothermia. (20 marks)

3. A 36-year-old primigravida at 37 weeks of gestation with the complaint of acute onset tightness of the chest and breathlessness is brought to the ETU. Her weight is 120 Kg. Her GCS is 12, pulse rate 130 beats/minute; Blood pressure is 80/40 mmHg. Her respiratory rate is 30 breaths per minute. She is afebrile.
- 3.1. List four (04) possible diagnoses. (10 marks)
- 3.2. Describe five (05) investigations that you will perform on this woman giving reasons. (20 marks)
- 3.3. What is your immediate management of this patient? (35 marks)
- 3.4. This lady is now in cardiac arrest. Outline appropriate management giving reasons. (35 marks)
4. A 70-year-old male with a past history of abdominal aortic aneurism repair presented to the Emergency Treatment Unit with severe epigastric/umbilical pain of 4 hours duration. His respiratory rate is 34/minute, pulse rate is 118/minute, blood pressure is 95/60 mmHg.
- 4.1. List five (05) possible diagnoses. (10 marks)
- 4.2. Describe five (05) initial investigations you request giving reasons. (25 marks)
- 4.3. Outline the initial steps in management giving reasons. (20 marks)
- The patient vomits a large volume of coffee ground vomitus and becomes hemodynamically unstable.
- 4.4. Identify two (02) most likely causes given in 4.1. and explain your answer. (20 marks)
- 4.5. Briefly describe the actions you take now. (25 marks)

5.

5.1. Explain the following terms:

5.1.1. Injury Severity Score (ISS) (05 marks)

5.1.2. Mangled Extremity Severity Score (MESS) (05 marks)

5.1.3. Reverse Triage (05 marks)

5.2. Briefly describe the main differences between the triage process employed in disaster management and the triage process routinely employed in emergency departments. (20 marks)

5.3. Describe a disaster triage tool(s) that you are aware of. (25 marks)

5.4. You are the medical officer in charge at the site of a major bus crash. The following patients are brought to your triage area. Using one triage system you outlined above, arrange these patients in order for treatment giving reasons. (40 marks)

Patients

- A- 30 year old man complaining of shortness of breath, holding right side of chest. He has no external injuries.
- B- 40 year old man lying down complaining he can't move his legs
- C- 20 year old man sitting with face down. He has a large wound over jaw and blood is coming from the mouth.
- D- 25 year old pregnant woman shouting that she is bleeding from vagina.
- E- 50 year old man with a deformity of the right thigh. He has no other injuries.
- F- 30 year old man with a deformity of the right lower leg. He has no external wounds. Distal pulse is absent
- G- 40 year old man complaining of pain in abdomen and pelvis. He has absent bilateral radial pulses
- H- 60 year old unconscious female with a bruise over right temporal area and respiratory rate of 4/minute

6. You are the new ETU consultant.

You are approached by an orthopaedic consultant who says he has seen a number of patients that have been mismanaged at your ETU.

He states that there have been a significant number of missed fractures.

6.1. Outline your response to the orthopaedic consultant. (20 marks)

The hospital director asks you to devise a process to decrease the number of missed fractures in your department.

6.2. Describe how you will approach this. (40 marks)

6.3. How will you assess if the introduction of your process is successful? (40 marks)

7. A 20-year-old unmarried woman was admitted to the ETU with sudden onset vaginal bleeding and lower abdominal pain.

On examination she is confused (GCS 13), pale, febrile (39°C) with cold extremities. Capillary refilling time (CRFT) > 3 seconds, thready pulse at 120/minute, blood pressure 60/40 mmHg, respiratory rate 30/minute.

7.1. Briefly describe your initial management. (40 marks)

7.2. List your differential diagnoses. (20 marks)

7.3. What further history and examination findings will help you to clarify the diagnosis in this patient? (30 marks)

7.4. List the investigations you will perform in this patient with justification. (10 marks)

8. A 40-year-old patient presents to the ETU after a train accident with severe haemorrhagic shock due to a pelvic fracture. He receives massive blood transfusion during resuscitation.

8.1. Briefly describe the principals of damage control resuscitation in this patient. (30 marks)

8.2. Define massive blood transfusion. (05 marks)

8.3. List five (05) laboratory tests relevant to massive blood transfusion. Describe their value in management of this patient. (20 marks)

8.4. List five (05) early complications of massive blood transfusion and discuss preventive measures to minimise these complications in three (03) of them. (45 marks)

9. A 36-year-old female presented to the ETU with an 8-hour history of acute onset severe frontal headache associated with nausea, vomiting and mild photophobia. She denied having any fever or seizures.

On arrival, she was conscious with Glasgow Coma Scale (GCS) of 15/15 and had temperature of 37°C, blood pressure of 132/82 mmHg, and mild neck stiffness.

9.1. Briefly describe the acute management of this patient (30 marks)

9.2. What is the most critical diagnosis? (15 marks)

On further history and examination, patient is noted to have secondary amenorrhea for one year and diplopia to right side.

9.3. What additional diagnosis would you consider at this stage? (15 marks)

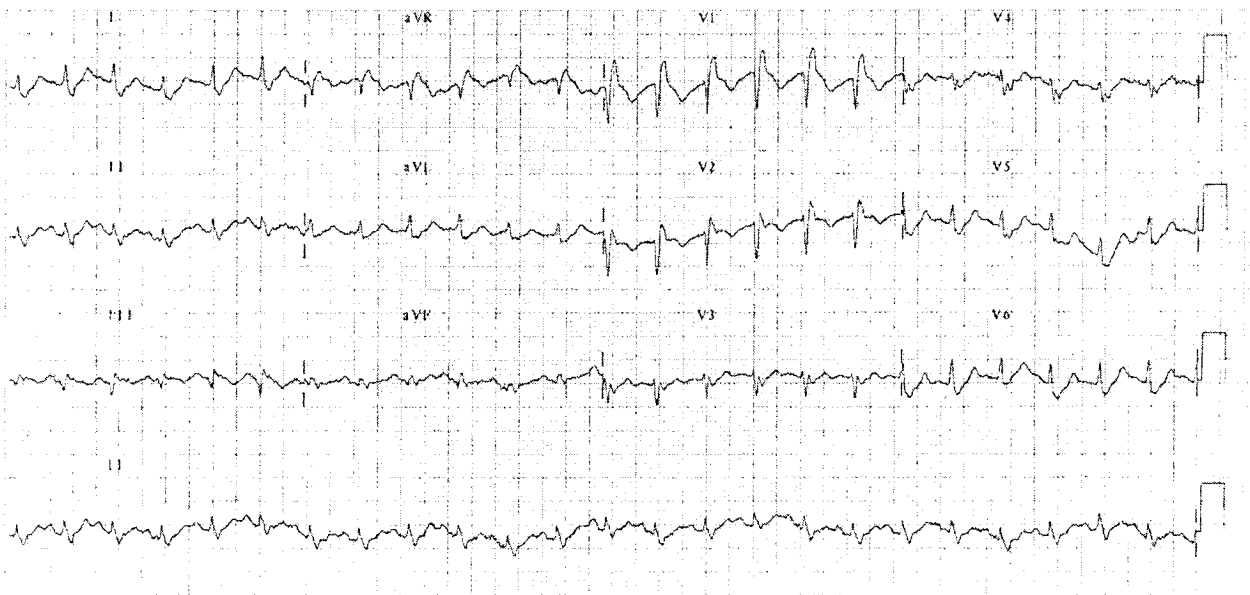
9.4. What further clinical signs would you look for in this patient? (20 marks)

9.5. What further management will you commence for the diagnosis considered in 9.3? (20 marks)

10. A 54-year-old female was admitted to ETU due to shortness of breath of one day duration. She also reported of having mild chest pain and cough, but denied having fever. She was recently hospitalized for chest infection and was discharged from the hospital a week ago.

On admission, she was afebrile, dyspneic with respiratory rate of 30/minute, heart rate of 126/minute and blood pressure of 130/78 mmHg. Oxygen saturation was 94%. Respiratory examination revealed few crepitation and reduced breath sounds in right side of the lung.

Her ECG on admission is shown below



- 10.1. What is the immediate management of this patient? (25 marks)
- 10.2. List two (02) major abnormalities seen in this ECG. (10 marks)
- 10.3. List two (02) possible causes for this patient's presentation. (15 marks)
- 10.4. List three (03) investigations that you would consider to diagnose the underlying condition, stating the diagnostic value (20 marks)
- 10.5. Two hours after admission, she suddenly collapsed and was found to have blood pressure of 68/52 mmHg and the repeat ECG was unchanged. Describe in brief the immediate management of this patient. (30 marks)