



UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF MEDICINE
FINAL EXAMINATION FOR MEDICAL DEGREES – MARCH 2021
MEDICINE PAPER II

Date: 08.03.2021

Time: 3 HOURS

Answer All TEN (10) Questions.

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Question:01

A 45-year-old female underwent total abdominal hysterectomy and bilateral salphingo-oopherectomy for ovarian malignancy. On the day five of surgery, she developed sudden onset of shortness of breath. On clinical examination, she was obese (BMI 30kg/m²), afebrile, PR 120bpm, BP 100/60mmHg, respiratory rate 32 cycles per minute and SpO₂ 85% on room air. Rest of the physical examination was normal.

FBC, CRP, Random Blood Glucose and Renal Profile done after the onset of shortness of breath were normal.

1.1 What is the most likely diagnosis? (10 Marks)

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1.2 List the risk factors she has for the diagnosis mentioned in 1.1? (10 Marks)

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1.3 List two urgent bedside investigations you would request in this patient and write the expected abnormalities? (15 Marks)

Investigation	Expected abnormalities

1.4 List three other investigations that would be helpful to arrive at a diagnosis mentioned in 1.1 and mention the expected findings (20 Marks)

Investigation	Expected findings

1.5 Outline the management of the condition mentioned in 1.1 (35 Marks)

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1.6 What measures would have prevented the development of the diagnosis you mentioned in 1.1 (10 Marks)

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Question:02

A 30-year-old female presents with pain and swelling of small joints of both hands including proximal interphalangeal joints and metacarpophalangeal joints for two months.

2.1 What is the most probable clinical diagnosis? (10 Marks)

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2.2 Give two other possible differential diagnosis. (10 Marks)

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2.3 What are the other three important clinical features that favours the diagnosis you mentioned in 2.1? (10 Marks)

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2.4 Name five investigations you would arrange to arrive at the above diagnosis? (10 Marks)

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Question:03

Part A:

A 55-year-old male with type 2 Diabetes Mellitus on metformin therapy was seen in the clinic with progressive deterioration of his vision and found to have diabetic retinopathy with an HbA1c of 7.2% and a BMI of 28 kg/m².

3.1 List 3 investigations that you would consider to further assess and optimally manage his condition (15 Marks)

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3.2 List 3 classes of drugs you may consider adding to his therapy to maintain optimal control of his diabetes and help reduce his BMI (15 Marks)

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His Blood tests revealed an ALT of three times upper limit of normal. He insists that he has never consumed any alcohol.

3.3 What additional diagnosis will you consider? (10 Marks)

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3.4 Mention two long term complications of the condition mentioned in 3.3 (10 Marks)

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3.5 Outline the management of the condition mentioned in 3.3

(20 Marks)

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Part B:

Covid-19 is a global pandemic affecting both developed and developing countries. A higher risk of disease occurs in frontline healthcare workers and the elderly. Oral Dexamethasone has been shown to reduce deaths in severe (O2 dependent) patients but can increase mortality in mild patients. Hydroxychloroquine did not show benefit in symptomatic patients but had adverse events in randomized clinical trials. Intravenous Remdesevir (an antiviral) is effective if given early in hospitalized patients. Many vaccines have been developed by the developed countries but there is a shortage of supplies to vaccinate the world.

Identify clinical and public health decisions from the above case description to indicate the following ethical principles. (Marks will be given for clear and specific descriptions)

3.6 List 2 therapeutic options to demonstrate "Beneficence"

(10 Marks)

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3.7 List 2 therapeutic decisions that will be against the principle of "Non Maleficence"

(10 Marks)

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3.8 What 2 Public Health decisions on Vaccination will demonstrate the principle of Justice and Fairness?

(10 Marks)

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Question:04

A 52-year-old male presents with a history of progressive weakness of both lower limbs of 3 days duration. He did not have bowel or bladder incontinence. On examination, both lower limbs were flaccid with a power of 2/5 proximally and 3/5 distally and he could not able to walk. His knee and ankle reflexes were absent and plantar reflex was equivocal. There was no sensory impairment. He was afebrile.

4.1 List 2 possible working diagnosis? (10 Marks)

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4.2 List 5 important and relevant investigations you would do on arrival to the emergency department? (10 Marks)

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On obtaining a detailed collateral history he has had a febrile illness associated with diarrhoea 3 weeks back.

4.3 What is the most likely diagnosis? (10 Marks)

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4.4 List one investigation that would help you to determine his prognosis. (10 Marks)

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Question:05

Part-A

A 35-year-old labourer from Paranthan was admitted to District General Hospital Kilinochchi, 3 hours after an unidentified snakebite. On admission, he had pain and bleeding at the site of bite in the right ankle. He also complained of double vision and drooping of his eyelids. Few hours later he complained of difficulty in speech and unable to walk and transferred to Teaching hospital, Jaffna. On admission to Emergency Treatment Unit (ETU), Jaffna, medical officer examined him and confirmed that patient had right sided arm & leg weakness and slurring of speech. They immediately ordered some blood investigations and started on treatment.

5.1 What bed side investigation you would do immediately in the ETU to confirm the likely snake? (5Marks)

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5.2 What is the most likely snake? (10 Marks)

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5.3 What will be your next step in the evaluation of right side limb weakness? (10 Marks)

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5.4 List three other complications will you anticipate and write the steps to be taken if he develops those complications? (20Marks)

Complications	Steps in the management

5.5 What advises you would give this patient on discharge from the hospital (05 Marks)

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Part-B

A 15-year- old school girl was admitted to A&E, 30 minutes after ingestion of some “Yellow Oleander” seeds. On admission, she complained of dizziness and vomiting. On examination, she was restless, pulse rate was 52 bpm, BP 90/60 mmHg.

5.6 What is the active agent which causes the clinical syndrome and briefly explain the mechanism of action (10 Marks)

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5.7 List two investigations you would carry out immediately in this patient and write the expected findings. (10 Marks)

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5.8 What will be your immediate steps in the management of this patient? (20 Marks)

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5.9 What complications will you anticipate and mention the treatment ? (10 marks)

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Question:06

A 24 –year-university student is admitted to the emergency treatment unit with a 3 week history of progressive legs swelling. The rest of the history was unremarkable other than having asthma. His only medications are salbutamol inhaler and analgesic mainly non-steroidal inflammatory agents for a sport injury sustained a month ago. Examination confirms pitting oedema up to the thighs. His weight on admission is 80kg. Blood pressure is 130/70 mmHg with no postural hypotension. His results of initial investigations revealed:

Serum sodium	140mmol/L
Serum potassium	4.8 mmol/L
Blood urea	8.4 mmol/L (2.5 – 6.7)
Serum creatinine	115micromol/L (70-96)
Serum albumin	24 g/L
Urinalysis	Protein +++++, Blood- nil
24 hour urine protein	5.8 g

6.1 What is your likely clinical diagnosis? (10 Marks)

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Subsequently he underwent a renal biopsy and it reveals normal appearances on light microscopy.

6.2 What is the most likely histological diagnosis? (10 Marks)

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6.3 Give three potential causes of his current clinical condition? (20 Marks)

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He was managed with restricted fluid intake of 1litre per day and a low-salt diet. He was commenced on a loop diuretic and high doses of steroids. Eight days later, his weight has reduced to 70 kg and his serum urea and creatinine have raised to 32 mmol/L and 170 micromol/L respectively. Urine analysis shows 4+proteinuria and 3+ blood. He informed the nursing staff of bilateral loin pain.

6.4 What complication has occurred and give clinical features which led you to think about this complication? (20 Marks)

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6.5 Outline the pathological mechanism / factors which predisposed to this complication? (20 Marks)

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6.6 If he has poor response to high doses of steroids, List the other treatment options (20 Marks)

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Question:07

A 25-year-old girl presented to the emergency department with right hypochondrial pain, malaise, loss of appetite and yellowish discoloration of her eyes for two weeks. On general examination, she is ill and icteric. Abdominal examination revealed tender hepatomegaly, but no splenomegaly or free fluid. Results of her initial investigations are as follows:

WBC – 7000 N – 55% L – 45%,	Hemoglobin – 12.2 g/dL	Platelets – 160 000/mm ³
ALT – 4000 U/L (<40)	AST – 2600 U/L (<40)	
ALP – 280 IU/L (44 -147)	Gamma GT – 88 IU/L (0-30)	
Total bilirubin – 9mg/dl (< 1.4)	Direct bilirubin – 7mg/dl (< 0.3)	
Total protein – 70 g/L	Albumin – 32 g/L	
Serum creatinine – 1.1 mg/dL	Sodium – 135 mmol/L	
Potassium – 4.0 mmol/L	CRP – 30 mg/L	
ESR – 50 mm 1 st hour	INR – 1.6	

7.1 What is the clinical diagnosis? (10 Marks)

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7.2 Write four possible aetiological causes for the above diagnosis? (10 Marks)

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7.3 What further information (mention five) you would gather from the patient to find out the above causes? (10 marks)

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7.4 List three clinical signs which would suggest the aetiological causes mentioned in 7.2. (10 Marks)

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7.5 What are the further investigations (mention 5) you would perform to find out the aetiological cause for the condition mentioned in 7.1 ? (20 Marks)

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On the 5th day of ward stay, she became confused and INR has risen to 3.

7.6 What complication she has developed? (5 Marks)

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7.7 Outline the management of the condition mentioned in 7.6. (35 Marks)

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Question:08

A 55-year-old female with bronchial asthma who has repeatedly received over the counter oral medication which was prescribed by the General Practitioner over a period of 6 months presented to the surgical casualty with a fracture neck of the femur following a fall (Confirmed by X-Ray). Her BMI was 32 kg/m², BP was 160/100 mmHg and random blood glucose was 280mg/dl.

8.1 Name 2 possible risk factors for her to develop diabetes mellitus? (10 Marks)

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8.2 Name a possible endocrinopathy she could have been suffering from? (10 Marks)

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8.3 Name a blood test that could assess her glycaemic status over the past few months? (05 Marks)

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8.4 Name 3 physical signs you would look for to support the endocrinopathy you have mentioned in 8.2 (10 Marks)

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8.5 Name 2 risk factors for her to develop a fracture neck of femur? (10 Marks)

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8.6 Name the biochemical tests and the specific imaging you would request to evaluate the fracture neck of the femur? (20 Marks)

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8.7 What endocrine emergency she could develop after admission to hospital if she stops the medication prescribed by her General Practitioner? (10 Marks)

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8.8 Outline the main steps in the management of the medical emergency mentioned in 8.7 (25 Marks)

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Question:09

A 52-year-old woman presented with progressive tiredness and lethargy for 3 weeks duration. On examination she was moderately pale with mild icterus.

9.1 Write two different types of anaemia that can present with these clinical features? (10 Marks)

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9.2 Write the expected findings in the blood picture report in the conditions mentioned in 9.1 (10 Marks)

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Further clinical assessment revealed bilateral cervical lymphadenopathy and mild splenomegaly in addition to pallor and icterus.

9.3 write 2 infectious and 2 non-infectious causes that could explain above clinical features (10 Marks)

Infectious causes	Non-infectious causes

9.4 List 6 investigations that would be helpful to arrive at a diagnosis and give reasons (40 Marks)

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This patient was discharged after the completion of initial treatment. However she got re-admitted 2 weeks later with fever of one day duration. Full blood count revealed Hb 8.5g/dl, WBC $0.4 \times 10^9/\text{mm}^3$, N -20%, L - 75%, E - 2%. Platelets 33,000/ mm^3 .

9.5 List 4 important investigations that should be done immediately (10 Marks)

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9.6 Outline the initial management for this presentation (20 Marks)

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Question:10

A 20-year-old female (weight 40kg) presents with a history of fever of 6 days duration associated with myalgia, arthralgia and retroorbital pain. On examination, he is afebrile, BP 100/90 mmHg, PR 126 bpm, absent breath sounds on right base of the lung. She is clinically diagnosed with dengue haemorrhagic fever(DHF). [Base line haematocrit (Hct) – 36%]

FBC done on day 6 shows:

WBC – 2560/mm³ Hb-15 g/dL Hct - 45% Platelets- 20,000/mm³

10.1 What are the two hallmark features of DHF? (10 Marks)

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10.2 List other three parameters (clinical and laboratory based) that favours DHF than dengue fever (10 Marks)

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10.3 Calculate the total amount of fluid to be given to this patient during the critical phase (10 Marks)

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10.4 List the clinical parameter that should be monitored in this patient (10 Marks)

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