



**FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA
FINAL EXAMINATION FOR MEDICAL DEGREES – March 2022
MEDICINE PAPER 1**

11th March 2022

(1.00 – 4.00pm) 3 hours

Index Number:

Instructions:

- 1. Write your index number in all the pages.**
- 2. Answer all questions.**
- 3. Write your answers in the space given after each part of the question.**
- 4. The space given is adequate for the expected answer.**
- 5. Normal values are given within brackets.**
- 6. Please return the question book at the end of the examination.**

1) A middle-aged, previously healthy male presents with gradual swelling of both feet for two weeks duration.

A. List **three (3)** features you would look for in the history of the presenting complaint favouring heart failure in this patient. (10 marks)

Initial examination reveals an obese male with moderate pallor of mucus membranes and bilateral pitting ankle oedema. Pulse rate is 110/min with regular rhythm and blood pressure is 180/100 mmHg. Auscultation over the precordium reveals a grade 3 pan-systolic murmur over the apex radiating to left axilla.

B. Name **four (4)** additional physical signs you would look for in the cardiovascular system examination in this patient. (20 marks)

C. Mention **four (4)** aetiological causes which may have contributed to heart failure in this patient. (20 marks)

D. List **five (5)** investigations you would request in this patient and mention how each one of them are useful in the diagnosis and the management. (25 marks)

E. List **three (3)** medications you would commence to reduce the mortality of this patient. (15 marks)

F. Mention **three (3)** lifestyle modifications that would benefit this patient. (10 marks)

2) You are the house officer in a medical ward. A 64-year-old non-smoker, with a one-month history of episodic haemoptysis is admitted to the ward from the outpatient department with a suspected diagnosis of bronchiectasis.

A. List **three (3)** other features in the **history** that will support above diagnosis. (10 marks)

B. List **three (3)** features in the examination which will support the diagnosis. (10 marks)

C. List **three (3)** useful investigations you would request on admission outlining expected findings in each. (30 marks)

D. You decide to start treatment as for bronchiectasis. Describe **three (3)** important steps in the management. (20 marks)

E. You are concerned that this could be a lung cancer. List **five (5) other** clinical features you would look for to support a diagnosis of lung cancer. (10 marks)

F. List **four (4)** important information/advices about the illness that you will communicate to the patient and carers on discharge. (20 marks)

3) A 44-year-old man presents with light-headedness and postural dizziness for one day. He has been unwell for last six days. First five days he had fever but he is fever free for last 24 hours. On examination, he is drowsy with cold peripheries, pulse rate-122/min, blood pressure 95/75mmHg.

Investigations on admission are shown below.

Hb – 18.5 g/dL ((11.5-14.5)

PCV – 61 (40-50)

WBC – 1.2×10^9 /L ($4-11 \times 10^9$) with 70% lymphocytes

Platelets – 18×10^9 /L ($150-450 \times 10^9$)

AST – 1574 U/L (5-40)

ALT – 1255 U/L (7-45)

UFR – pus cells 3-5/HPF, red cells 1-2/HPF

A. What is the most likely clinical diagnosis? (10 marks)

B. List **five (5)** other clinical signs you would look for in this patient. (20 marks)

C. List **five (5) other** investigations you would perform on admission explaining their usefulness in the management. (25 marks)

D. Outline **five (5)** important steps in the management of this patient over **next two hours**. (30 marks)

E. Despite adequate resuscitation his blood pressure (BP) is persistently low (90/70 mmHg).

List **three (3)** complications that could account for low BP in this patient. (15 marks)

4) A 46-year-old man with diabetes mellitus presents with fever, painful abdominal distension with altered level of consciousness for three days. He is married for 15 years with no children. He has seen a rheumatologist recently for worsening knee pain for six months. He does not consume alcohol.

On examination, he is drowsy and disoriented. He is not pale. However, he is icteric and pigmented. Abdominal examination reveals tender distended abdomen with shifting dullness.

Results of liver function tests are given below.

AST – 98 U/L (5- 42)

ALT – 78 U/L (5- 42)

Serum total protein – 54 g/L (60-80)

Serum albumin – 28 g/L (35-50)

Total bilirubin – 55 μ mol/L (5-17)

Alkaline phosphatase – 112 U/L (60-300)

Gamma GT – 45 U/L (10-48)

INR – 2.1 (0.9-1.15)

A. What is the most likely diagnosis? (10 marks)

B. What is the most likely aetiology for the diagnosis mentioned in A? (15 marks)

C. List **four (4)** clinical features given in the scenario to support the condition mentioned in **B**.

(20 marks)

D. List **one (1)** investigation **each** to screen and confirm the condition mentioned in **B**.

(20 marks)

E. List **three (3)** other complications of the condition mentioned in **B**.

(15 marks)

F. Mention one therapeutic intervention used to treat this condition.

(10 marks)

G. His 32-year-old younger brother worries whether he would get the disease.

What information would you give him?

(10 marks)

5) A 42-year-old previously healthy woman presents with weight gain, daytime somnolence and lethargy for three months duration. Examination reveals a BMI of 34 kg/m², waist circumference 122 cm, multiple abdominal striae and comparatively thin legs.

Investigation results are as follows.

Fasting blood glucose - 156 mg/dL (<110)

Serum creatinine - 90 µmol/L (53-97)

Hb - 12.5g/dL (11.5-14.5)

White cell count - 5.4 X 10⁹/L (4-11 X 10⁹)

Platelet count - 234 X 10⁹/L (150-450 X 10⁹)

UFR- sugar 1+, no cells or protein

A. Mention **two (2)** possible differential diagnoses for this patient's presentation. (10 marks)

B. Mention **three (3)** other clinical features in support of **each** of the diagnoses mentioned above. (30 marks)

C. Mention **three (3)** supportive or confirmatory investigations for **each** of the diagnosis mentioned in A. (20 marks)

D. Briefly discuss the management of **one of the** conditions mentioned in A. (20 marks)

E. What is the most likely reason for the daytime somnolence seen in this patient? (10 marks)

F. Six months later she presents with sudden onset severe headache associated with ophthalmoplegia. What is the most likely cause for this presentation? (10 marks)

6) A 35-year-old man presents with numbness and weakness of arms and legs progressing over three months. He has no change in vision, hearing, speech or swallowing.

A. List **two (2)** different sites of lesions in the nervous system, which can give rise to these symptoms. (10 marks)

B. List **one (1)** disease in **each** of the sites you mentioned in **A** that could give rise to this clinical picture. (20 marks)

C. List **three (3)** additional clinical features for **each** of the diseases you mentioned in **B**. (30 marks)

D. List **three (3)** investigations to confirm or support **each of the diseases** you mentioned in **B.**

(30 marks)

E. Mention **one (1)** complication that can occur in **each of the diseases** you mentioned in **B.**

(10 marks)

7) A 41-year-old man presents with fever, fatigue and loss of weight for one month duration. On general examination he is pale and there is bilateral cervical lymphadenopathy.

His investigations results are as follows.

Hb – 8.5 g/dL (11.5-14.5)

WBC – $14 \times 10^9/L$ ($4-11 \times 10^9$)

Platelet count – $135 \times 10^9/L$ ($150-450 \times 10^9$)

ESR – 110 mm in 1st hour (8-20)

CRP – 12 mg/dL (<6)

FBS – 105 mg/dL (≤ 110)

A. List **three (3)** differential diagnoses.

(10 marks)

B. Mention **three (3)** additional features in the history and examination that would support **each of** the above differential diagnoses. (30 marks)

C. List **five (5)** additional investigations you would perform in this patient and briefly describe expected findings in **each of the** conditions mentioned in A. (30 marks)

While being investigated he complains of acute onset pain and swelling over right big toe and distal right foot. There is no preceding trauma.

D. What is the most likely diagnosis? (10 marks)

E. Mention one investigation you would perform to confirm the diagnosis. (10 marks)

F. Outline the management of the condition mentioned in D. (10 marks)

8) A 33-year-old woman presents with headache, facial puffiness and reduced urine output for one week duration. On admission, she is tachypnoeic and bi-lateral pitting ankle odema is noted. Blood pressure is 160/100mmHg and precordial, respiratory system and abdominal examination is normal.

Investigation results performed on admission

Hb	11.5 g/dL	(11.5-14.5)
WBC	$9.4 \times 10^9/L$	$(4-11 \times 10^9)$
Platelet count	$275 \times 10^9/L$	$(150-450 \times 10^9)$
serum sodium	135 mmol/L	(135-145)
Serum potassium	6.5 mmol/L	(3.6-5.2)
Serum creatinine	542 $\mu\text{mol/L}$	(53-97)
Serum albumin	35 g/dL	(34-54)
UFR		
Albumin	1+	
Pus cells	4-6/HPF	
Red cells	15-25/HPF	
Red cell & granular casts	Present	
AST	43 U/L	(5-40)
ALT	47 U/L	(7-45)
Capillary blood sugar	85mg/dL	

A. Identify **four (4)** clinical or biochemical abnormalities seen in this patient. (10 marks)

B. What is the most likely clinical diagnosis? (10 marks)

C. List **four (4)** underlying clinical causes which could give rise to the diagnosis mentioned in B.

(20 marks)

D. List **three (3)** other investigations you would request on admission and mention the expected findings.

(30 marks)

E. Outline **five (5)** important steps in the management of this patient **within first 24 hours**.

(30 marks)

