



**FACULTY OF MEDICINE, UNIVERSITY OF RUHUNA
FINAL EXAMINATION FOR MEDICAL DEGREES – February 2023
MEDICINE PAPER 1**

20th February 2023

(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 65-year-old woman with long standing hypertension is admitted with severe shortness of breath for two hours duration. She also complains of difficulty in lying flat, intermittent palpitation and mild chest discomfort during last few hours. She gives a history of exertional dyspnea for three months and 2D echocardiogram done two months ago showed global left ventricular hypokinesia with an ejection fraction of 35%.
On examination, her oxygen saturation is 89%, pulse is irregularly irregular with a rate of 148 /min, and blood pressure is 156/100 mmHg. Auscultation of lungs reveals bilateral fine basal crepitations. ECG shows rapid atrial fibrillation.

A. What is the most likely cause for her presentation? (5 marks)

B. List **five (5)** other physical signs that are likely to be present in this patient. (15 marks)

C. Name **two (2)** likely precipitating factors of the condition mentioned in A. (10 marks)

D. Mention **four (4)** possible causes for the given echocardiographic findings in this patient. (10 marks)

E. Mention **five (5)** steps in the acute management of this patient during the first two hours of the admission to the hospital. (25 marks)

F. List **three (3)** therapeutic agents that you would start in order to improve her long-term survival. (15 marks)

Three hours later, her blood pressure and pulse rate are found to be 70/50 mmHg and 160 per min respectively. ECG reveals broad complex tachycardia.

G. What is the most likely cause for this presentation and how would you manage? (20 marks)

2. A 35-year-old female school teacher developed an episode of loss of consciousness early hours in the morning while travelling for an educational tour. She suddenly made a noise and fell down in the bus with rigidity of limbs followed by repeated jerky movements of the limbs. Just before falling she had told her colleague sitting next to her in the bus that she has a feeling that she had come to the same place with same people around her. The patient has complained of similar experiences before and she has been taking regular medication for such episodes.

A. Briefly describe the immediate actions that her colleagues should take. (10 marks)

B. What diagnosis would you consider if she continues to have jerky movements until she was brought to the nearest base hospital in 45 minutes? (10 marks)

C. Briefly describe the steps in the management if she continues to have jerky movements on arrival to the hospital. (30 marks)

Patient became conscious and rational in one hour.

D. Describe **five (5)** features you would elicit in the history that would help to find out the cause for her presentation or assist further management and mention the significance of each of them. (20 marks)

E. List **two (2)** further investigations you would suggest to arrange for this patient on discharge giving reasons for selecting them. (10 marks)

F. Mention the medication you would recommend to this patient on discharge, indicating the rationale for your choice? (20 marks)

3. A 35-year-old female presents with weight loss of 13 kg over two months. Her appetite is normal.

A. List **four (4)** possible underlying diagnoses. (10 marks)

Her initial investigation reveals the TSH value of 0.001 mmol/L.

B. What is the most likely diagnosis and what further investigation would help you to confirm the diagnosis? (5 marks)

C. List **three (3)** pathological conditions that could be present in the thyroid gland of this patient. (15 marks)

D. Briefly describe the initial drug treatment of this patient; mentioning the monitoring and necessary advice on adverse effects. (40 marks)

The patient did not attend for the follow up after the first clinic visit. Six months later she is again seen in the clinic with shortness of breath and palpitations.

E. List **two (2)** complications which may explain the new symptoms and mention **one (1)** physical sign you would elicit to support **each** of the complications. (15 marks)

She continues treatment for two years under supervision but thyroid testing reveals that the original thyroid disease is still not cured.

F. List **two (2)** possible treatment methods that may be recommended as the next step, mentioning a complication of each treatment modality. (15 marks)

4. Part A

A 25-year-old university student developed abdominal cramps and vomited profusely at midnight. Later she developed watery diarrhea. She was feeling unwell and was unable to stand. She takes food from a nearby restaurant and had fried rice for dinner.

On admission she had a dry mouth. The pulse rate was 110 per minute, blood pressure 90/60 mm Hg. The abdomen was soft and non-tender.

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

B. List **three (3)** possible etiological agents. (15 marks)

C. Mention **two (2)** important steps in the management. (10 marks)

Part B

A 25-year-old army soldier had fever, anorexia, right-sided abdominal pain and dark urine for one week. There was **no** history of exposure to drugs, alcohol or toxins.

His general practitioner noted jaundice and ordered few investigations

Hb	12 g/dL	(11.5-14.5)
WCC	$5 \times 10^9 /L$	$(4-11 \times 10^9)$
Platelet count	$175 \times 10^9/L$	$(150-450 \times 10^9)$
ALT	3000 U/L	(7-45)
Total bilirubin	8 mg/dL	(0.1-1.2)

Urine bile Positive

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

B. Mention **three (3)** further questions that you would ask to determine the etiology. (15 marks)

C. List **two (2)** investigations that can be used to confirm the underlying etiology. (10 marks)

Three days after admission he was becoming increasingly drowsy.

D. What complication would you suspect? (5 marks)

E. State **five (5)** important steps in the management of this patient at this stage. (25 marks)

5. A 70-year-old male presented with progressive shortness of breath for one month. General examination revealed an emaciated, pale, and dyspneic patient. Examination of the chest revealed stony dullness and absent breath sounds over the entire right hemithorax.

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

B. List **two (2)** different diseases that could give rise to this presentation. (10 marks)

C. List **five (5)** questions you would ask in the history of this patient and mention their value in differentiating the two diagnoses mentioned in B. (20 marks)

D. Mention **five (5)** additional physical signs you would elicit in this patient and mention their value in differentiating the two diagnoses mentioned in B. (20 marks)

E. List **two (2)** investigations that would confirm **each** of the diagnoses mentioned in **B** with the expected findings. (20marks)

While being investigated and managed in the ward, patient developed acute confusion, worsening breathlessness, and high fever with rigors.

He was found to have pulse rate of 120 per minute and blood pressure of 80/50 mmHg.

F. What complication of the initial condition mentioned in **A** would explain these findings? (10 marks)

G. What emergency therapeutic measure is indicated in the management at this stage? (10 marks)

6. A 57-year-old man is admitted with headache, dizziness and blurred vision for two months. On examination, he is plethoric and abdominal examination reveals splenomegaly.

His admission Full Blood Count (FBC) is shown below,

Hb	20.6g/dL	(11.5-16)
HCT	64.5%	(32-45)
MCV	85.2fL	(75-100)
MCHC	31.9g/dL	(30.5-36)
MCH	28.2pg	(27-32)
WCC	17.8X10 ⁹ /L	(3.4-11 X10 ⁹)
Platelets	520 X 10 ⁹ /L	(150-450 X 10 ⁹)

A. List **three (3)** haematological abnormalities in this FBC. (10 marks)

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

C. Mention **five (5)** investigations you would arrange in this patient and explain the importance of each of them in confirming the diagnosis mentioned in **B** or to exclude other differential diagnoses. (30 marks)

D. State **four (4)** complications of the condition mentioned in B. (20 marks)

E. What is the urgent therapeutic measure indicated in this patient? (15 marks)

One year following the diagnosis, his FBC on routine clinic visit is given below.

Hb	12.6g/dL	(11.5-16)
HCT	41.5%	(32-45)
MCV	65.2fL	(75-100)
MCHC	27.9g/dL	(30.5-36)
MCH	21.1pg	(27-32)
WCC	17.4 X10 ⁹ /L	(3.4-11 X10 ⁹)
Platelets	620 X 10 ⁹ /L	(150-450 X 10 ⁹)

F. State **two (2)** reasons for the changes of haematological indices in this FBC. (15 marks)

7. A 33-year-old previously healthy woman presents with facial puffiness and swelling of both legs for one week duration. On admission, there is bilateral pitting oedema up to mid thighs and her blood pressure is 100/70 mmHg. Examination of the chest and abdomen reveals reduced breath sounds over the right lower zone and ascites.

Investigation results performed on admission

Hb	11.1 g/dL	(11.5-14.5)
WCC	9.4 X 10 ⁹ /L	(4-11 X 10 ⁹ /L)
Platelet count	255 X 10 ⁹ /L	(150-450 X 10 ⁹ /L)
serum sodium	135 mmol/L	(135-145)
Serum potassium	3.8 mmol/L	(3.6-5.2)
Serum creatinine	108 µmol/L	(53-97)
Serum albumin	24 g/dL	(34-54)
UFR pus cells	1-2 per HPF	
Red cells	Nil	
Protein	3+	
Red cell & granular casts	Absent	
AST	38 U/L	(5-40)
ALT	35 U/L	(7-45)
Capillary blood sugar	95mg/dL	

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

B. Identify **three (3)** clinical or biochemical features in this patient that would support the clinical diagnosis given in A. (10 marks)

C. Mention **two (2)** more investigations that would perform to support the clinical diagnosis given in A with expected results. (10 marks)

D. List **four (4)** underlying causes which could give rise to this presentation. (20 marks)

E. List **five (5)** more investigations that you would perform to identify the cause or to manage this patient indicating their usefulness. (20 marks)

F. Mention **four (4)** steps of the initial management of this patient. (20 marks)

Five days later she develops right sided abdominal pain and gross haematuria. What is the most likely cause for this presentation? (10 marks)

8. A 35-year-old previously healthy female presented with fever with chills, arthralgia and loss of appetite for 4 weeks duration.

Investigation results on admission.

Hb	9.9 g/dL	(11.5-14.5)
WCC	14.5 X 10 ⁹ /L	(4-11 X 10 ⁹ /L)
Neutrophil	70%	
Platelet count	255 X 10 ⁹ /L	(150-450 X 10 ⁹ /L)
ESR	110 1 st hour	
UFR		
Pus cells	1-2/HPF	

A. List **three (3)** differentia diagnoses for this presentation? (10 marks)

B. List **three (3)** physical signs in support of **each** of the differential diagnoses mentioned in A. (30 marks)

C. List **three (3)** investigations in support of **each** of the differential diagnoses mentioned in A with the expected findings. (30 marks)

D. Briefly describe the management of one of the conditions listed in the A. (15 marks)

E. She developed severe headache and became semiconscious on day four of admission. NCCT brain revealed sub arachnoid haemorrhage. Give a possible explanation for this presentation. (15 marks)

