



Faculty of Medicine University of Ruhuna

**Third Examination for Medical Degrees (Part II) – December 2022
Pathology Paper I**

Monday 19th December 2022

9.00 am to 11.00 am

Two hours for all six (06) questions

Answer **ALL SIX** questions.
Answer each part in the given space.

Index Number:

Part A

1. Describe the pathological basis of the following.

1.1. Thickened left ventricular wall in a patient with long standing hypertension. (30 marks)

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1.2. Pulmonary oedema in a patient with left heart failure. (30 marks)

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1.3. Adenocarcinoma in lower oesophagus in a patient with chronic acid reflux. (40 marks)

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Part B

2. A 56-year-old man presented with chronic cough and intermittent haemoptysis. He also gave a history of recent loss of weight and loss of appetite. On examination he was cachectic. Biochemical investigations showed a high serum calcium level. The chest radiograph showed a 6 cm irregular hilar mass in the left lung.

Ultrasound guided biopsy of the lesion showed a tumour showing keratin pearl formation.

2.1. What is the most probable diagnosis of his hilar mass? (05 marks)

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2.2. What is the fixative used to transport the biopsy of this patient? (05 marks)

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2.3. List **two** (2) laboratory investigations other than the ultrasound guided biopsy that can be performed to diagnose his tumour. (10 marks)

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2.4. Briefly describe the pathological basis of cachexia in this patient. (15 marks)

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2.5. Briefly describe the pathological basis of high serum calcium level in this patient. (15 marks)

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2.6. Describe the other microscopic features you would expect in his biopsy. (20 marks)

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2.7. Describe the macroscopic features you would expect to see in his left lung. (30 marks)

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Part C

3.1. A 42-year-old man presented with right lower back pain and high fever associated with dysuria was diagnosed to have acute pyelonephritis.

3.1.1. Briefly describe the pathogenesis of acute pyelonephritis in this patient. (20 marks)

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3.1.2. List **two (2)** laboratory investigations that can be performed to diagnose his condition and state the expected findings. (10 marks)

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3.1.3. Briefly describe the macroscopic features you would expect in his kidney. (20 marks)

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3.1.4. Briefly describe the microscopic features you would expect in his kidney. (20 marks)

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3.2. A 65-year-old man was presented with haematuria. Ultrasound scan of the abdomen showed an irregular mass in the left kidney.

3.2.1 What is the most probable diagnosis? (10 marks)

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3.2.2 Describe the expected macroscopic features of his left kidney as per your diagnosis stated in 3.2.1. (20 marks)

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Part D

4.1. List **five (05)** space occupying lesions (SOL) in the brain. (15 marks)

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- 2.....
- 3.....
- 4.....
- 5.....

4.2. Briefly describe the macroscopic appearance of **one (01)** of the lesions you have mentioned in 4.1 (25 marks)

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4.3. Briefly describe the microscopic appearance of the lesion you have mentioned in 4.2. (10 marks)

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4.4. Briefly describe the effects of SOL in brain. (20 marks)

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4.5. Briefly explain the manifestations produced by transtentorial herniation. (30 marks)

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Part E

5. A 52-year-old man presented with generalized weakness and nocturia for 6 months duration.

He had proteinuria but no glycosuria. His investigations revealed the following:

Analyte	Result	Reference Interval
Serum Creatinine	640	60 - 110 μ mol/L
eGFR (Estimated Glomerular Filtration Rate)	8 mL/min/1.73m ²	
Serum Total Calcium	1.92	2.1 - 2.5 mmol/L
Plasma Parathyroid Hormone (PTH)	34	2-7 pmol/L
Serum Phosphate	2.4	0.8 - 1.4 mmol/L
Alkaline Phosphatase (ALP)	205	30 - 130 U/L

5.1. What is the most likely diagnosis? (15 marks)

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5.2. State **two** (2) systemic diseases which could cause the condition you mentioned in question **5.1** (10 marks)

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5.3. Briefly explain the reasons for the above biochemical abnormalities. (30 marks)

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5.4. Outline how the glomerular function is assessed? (15 marks)

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5.5. State **three (3)** complications of the disease you mentioned in **5.1** (15 marks)

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5.6. State **three (3)** investigations to support the diagnosis and management of complications you mentioned in **5.5.** (15 marks)

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Part F

6. A 62 year old farmer presents with progressive weakness, and tiredness on exertion.
 Examination revealed pallor. There was no organomegaly.

6.1. If you suspect iron deficiency anaemia (IDA) in this patient, state **two (02)** important questions you would ask giving reasons. (15 marks)

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6.2. State red cell findings in automated full blood count (FBC) report in IDA. (15 marks)

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6.3. Describe how response to therapy should be monitored in IDA. (15 marks)

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6.4. Clinician suspects vitamin B 12 deficiency anaemia and he request further details. State **two (02)** questions you would ask to support the diagnosis of vitamin B 12 deficiency in this patient giving reasons. (15 marks)

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6.5. State the salient blood picture findings expected in vitamin B12 deficiency anaemia. (10 marks)

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6.6. Due to severe anaemia and co morbid factors blood transfusion was started. Within 10 minutes of commencement of transfusion patient collapsed and became breathless. Acute haemolytic transfusion reaction was suspected.

List **three (03)** samples you collect from the patient immediately and indicate the tests you would request from each sample. (15 marks)

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6.7. The patient was transferred to ICU for further care. He developed purpura and multi organ failure. State the most likely condition you suspect now and state how you would confirm the diagnosis? (15 marks)

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