



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

FOURTH BPHARM PART II EXAMINATION – OCTOBER/NOVEMBER 2022

PH 4212 CLINICAL PHARMACY -SEQ PAPER

TIME: TWO HOURS

INSTRUCTIONS

- Answer **all** questions in parts **A** and **B**.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

PART A

1.

Ms WP (35 years old, body weight 54 kg) presented to the Emergency Department of the hospital due to a 3-day history of productive cough, cold, fever and shortness of breath. Her chest X-ray showed a lower respiratory tract infection and she was admitted to the hospital. On examination, her vital signs are recorded as follows:

heart rate 110 bpm
 temperature 38.2°C
 respiratory rate 26 breaths per minute
 blood pressure 140/92 mmHg
 oxygen saturation 89% on 2 L/min oxygen

The patient was diagnosed with community-acquired pneumonia and the treatment plan was as follows:

oxygen 2 L/min
 salbutamol nebulised 2.5 mg qds
 ceftriaxone IV 1 g once daily
 azithromycin IV 500 mg once daily
 paracetamol oral 1 g qds

Following are the results of her laboratory investigations:

Full blood count	Value	Reference value
Creatinine	110 µmol/L	50-110 µmol/l
Estimated creatinine clearance	40 mL/min	74-94 mL/min
Urea	10.6 mmol/L	(2.5–8 mmol/L)
C-Reactive Proteins	164 mg/L	(<10 mg/L)
White Cell Count	28 × 10 ⁹ /L	(4–11 × 10 ⁹ /L)
Neutrophils	25 × 10 ⁹ /L	(2–7.5 × 10 ⁹ /L)

1.1 Interpret the above laboratory findings. (40 marks)

1.2 Justify the indications of above medications for this patient. (10 marks)

1.3 After 5 days, the patient was discharged with following medications.

Azithromycin oral 500 mg once daily for 3 days

Salmeterol 50µg MDI 1 puff bd for 7 days

Salbutamol 100 µg MDI 1 puff nocte

1.3.1 Write two advices that you would give the patient about the use of antibiotics at home. (08 marks)

1.3.2 Describe the important steps that you would explain the patient about proper use of metered dose inhalers mentioned in 1.3. (42 marks)

2.

Mr K, a 64-year-old retired government officer, was admitted to the emergency department complaining of severe chest pain after climbing stairs at his son's house. On arrival at hospital and subsequent clinical review by the admitting doctor the following information was obtained.

Signs and symptoms on examination:

Blood pressure 160/80 mmHg

Heart rate 75 bpm, regular

Respiratory rate 15 breaths per minute

No basal crackles in the lungs

An ECG taken immediately on arrival reveals ST elevation of 3 mm in the inferior leads.

Patient had a previous medical history of hypertension for 10 years.

A preliminary diagnosis of myocardial infarction was made.

Full blood counts, liver function tests, electrolytes and renal function, Chest X-Ray, total cholesterol, full blood count and blood glucose were taken at admission.

2.1 What further biochemical test should be ordered to confirm the diagnosis? (05 marks)

2.2 Briefly describe why the biochemical test you mentioned in 2.1 is important for the diagnosis. (25 marks)

2.3 The following biochemical tests taken at the admission were reported. Interpret the below laboratory test results. (20 marks)

Na ⁺	136 mmol/L	(135–145 mmol/L)
K ⁺	4.3 mmol/L	(3.5–4.0 mmol/L)
Urea	5.2 mmol/L	(0–7.5 mmol/L)
Creatinine	81 µmol/L	(50–110 µmol/L)
Total cholesterol	5.9 mmol/L	(<4 mmol/L)
Blood glucose	4.4 mmol/L	(4–10 mmol/L)

2.4 After 4 days, the patient was discharged from the hospital. His discharge medications list is given below.

metoprolol 50 mg bd

Simvastatin 40 mg daily
 Ramipril 5 mg bd
 Aspirin 75 mg daily

- 2.4.1 Write drug classes of each of above medications. (10 marks)
 2.4.2 Explain the key counselling points that you would explain the patient about the above medications. (40 marks)

PART B

3.
 3.1 List three drugs that,
 3.1.1 Increase the serum prolactin level. (06 marks)
 3.1.2 Decrease the serum prolactin level. (06 marks)
 3.2 Briefly explain the possible teratogenic effects of drugs in different trimesters of pregnancy. (18 marks)
 3.3 Describe the factors affecting placental transfer of drugs. (30 marks)
 3.4 Describe the general principles that a clinical pharmacist should be aware of while prescribing drugs to a pregnant patient. (40 marks)
4.
 4.1 Briefly describe below pharmacokinetic compartment modelling concepts. (30 marks)
 4.1.1 Compartmental modelling
 4.1.2 Physiological modelling
 4.2 Describe the reasons associated with altered drug binding. (20 marks)
 4.3
 4.3.1 What is the need of providing intravenous therapy for patients? Justify your answer. (18 marks)
 4.3.2 List six complications associated with intravenous therapy. (12 marks)
 4.3.3 What is a live attenuated vaccine? Explain. (20 marks)

@@@@@@@@

Full blood count	Value	Reference point
Creatinine	49 μmol/L	50-110 μmol/L
Druged creatinine clearance	40 ml/min	74-94 ml/min
Urea	10.5 mmol/L	(2-8 mmol/L)
C-Reactive Protein	150 mg/L	(1-10 mg/L)
White Cell Count	25 × 10 ⁹ /L	(4-11 × 10 ⁹ /L)
Neutrophils	25 × 10 ⁹ /L	(2-7.5 × 10 ⁹ /L)