



**UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES**

**DEPARTMENT OF PHARMACY**

**FOURTH BPHARM PART II EXAMINATION – SEPTEMBER 2023**

**PH 4212 CLINICAL PHARMACY – SEQ PAPER**

**TIME: TWO HOURS**

**INSTRUCTIONS**

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

**PART A**

1. Mrs SY is a 43-year-old woman (body weight 42 kg) working as a labourer in a tea estate. She was admitted to the hospital before three days ago due to faintishness and tiredness. She was pale and unwell. The full blood count report of this patient is given below.

Full blood count.	Value	Reference value
Hb	8.7 g/dL	12 – 17 g/dL
Red blood cells	$3.5 \times 10^{12}/L$	$4.5 - 5.6 \times 10^{12}/L$
Mean Cell Volume	72 fl	76.0 – 96.0 fl
Haematocrit	34 %	37.0 - 47.0 %
Mean Cell Haemoglobin	25 pg	27.0 – 33.0 pg
Mean Cell Haemoglobin concentration	31 g/dL	32.0 – 36.0 g/dL
Platelet count	$310 \times 10^9/L$	150 – 400 $10^9/L$
Total white cell count	$6.4 \times 10^9/L$	$4.5 - 11.0 \times 10^9/L$
Neutrophil	70 %	40% - 75 %
Lymphocyte	15 %	10% - 40 %
Eosinophil	3 %	1% - 6 %
Monocyte	2 %	<10

1.1.

- 1.1.1. Review above report and write one possible clinical condition that could be manifested in this patient. (10 marks)
- 1.1.2. Justify the reasons for your answer in 1.1.1. (20 marks)

- 1.1.3. Write two other laboratory tests that you would suggest to confirm the condition mentioned in 1.1.1. **(10 marks)**
- 1.2. During clinical pharmacist review, the past medical records of Mrs SY revealed that she was treated for atrial fibrillation and on warfarin 1.5 mg daily therapy for last three years. Her INR was assessed after admission, and it was 1.6. (Therapeutic INR ranges between 2.0 – 3.0)
- 1.2.1. What is your recommendation to the treating team regarding warfarin therapy? Give reasons for your answer. **(25 marks)**
- 1.2.2. Briefly explain why pharmacists should monitor patients on warfarin. **(15 marks)**
- 1.2.3. As the clinical pharmacist, briefly describe four counselling points that you would mainly emphasize to this patient about warfarin therapy. **(20 marks)**
2. Mr. XY was (69 years old) diagnosed with diabetes mellitus and hypertension for last 15 years and was on below medications.

Rosuvastatin	10 mg	nocte
Losartan	50 mg	bd
Aspirin	75 mg	nocte
Clopidogrel	75 mg	nocte
Spironolactone	12.5 mg	bd
Metformin	1 g	bd
Gliclazide	80mg	bd
Sitagliptin	50 mg	bd

2.1.

- 2.1.1. If this patient is under your care in the hospital ward, list the information that you would expect to collect from this patient while taking the medication history. **(16 marks)**

- 2.1.2. Write indications of each of above medications for this patient. **(24 marks)**

2.2. The results of his routine (recent) blood investigations are stated in below tables.

Electrolyte	Result	Reference value
Sodium	126 mmol/L	136 – 145 mmol/L
Potassium	5.6 mmol/L	3.5 – 5.2 mmol/L
Calcium	2.20 mmol/L	2.20 – 2.55 mmol/L
Chloride	101.9 mmol/L	95 – 110 mmol/L
Phosphate	1.0 mmol/L	0.9 – 1.5 mmol/L



Test	Result	Reference value
AST	19 U/L	0 – 35 U/L
ALT	11 U/L	0 – 45 U/L
Urea	31 mmol/L	3-8 mmol/L
Creatinine	192 $\mu$ mol/L	74 – 110 $\mu$ mol/L
FBS	108 mg/dL	60-110 mg/dL
HbA <sub>1c</sub>	6.1%	<6.5% normal

- 2.2.1. Interpret the above laboratory results. (20 marks)
- 2.2.2. Based on your answer in 2.2.1, what is the medical condition that may have been developed in this patient? (05 marks)
- 2.2.3. Write one change of medications that you would suggest to this patient upon the above laboratory test results. Give reasons for your answer. (15 marks)
- 2.3. Mr. XY was admitted to the hospital due to a development of swelling in his ankles. Write two types of diuretics that could be given to this patient. Name one example medicine for each of the types. (20 marks)
- 3.
- 3.1. Briefly explain the possible teratogen effects in different trimesters. (20 marks)
- 3.2. Briefly describe the risk factors for poor medicine use in elderly. (30 marks)
- 3.3. What are the general principles that a clinical pharmacist should consider when prescribing drugs to an elderly patient? Briefly explain. (50 marks)
- 4.
- 4.1.
- 4.1.1. List five factors affecting drug responses. (30 marks)
- 4.1.2. Describe the physiological conditions associated with altered drug binding. (20 marks)
- 4.2.
- 4.2.1. List the two types of protocols used to tests teratogenicity. (18 marks)
- 4.2.2. Briefly explain how the assessment of developmental toxicity is conducted. (12 marks)
- 4.3. Write a short note on storage and transport of vaccines. (20 marks)

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