



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

FOURTH BPHARM PART II EXAMINATION – JUNE 2018

PH 4212 CLINICAL PHARMACY (SEQ)

TIME: TWO HOURS

7

INSTRUCTIONS

- Answer **all four (04)** questions in the given booklet.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

01. Pharmacokinetics represents complex physiological processes in mathematical form.

1.1 Define the following terms.

(20 marks)

- 1.1.1 Population pharmacokinetics
- 1.1.2 Toxicokinetics
- 1.1.3 Bioavailability
- 1.1.4 Half-life

1.2 Name **five** applications/uses of pharmacokinetic principles in the biomedical field.

(15 marks)

1.3 After a single IV bolus dose of 600 mg of an antibiotic, the initial concentration was estimated as 15 mg/L.

1.3.1 Estimate the volume of distribution (Vd) of this drug.

(12 marks)

1.3.2 Calculate the IV dose required to achieve an initial concentration of 20 mg/L

(13 marks)

1.4 List **four** conditions where protein binding of drugs are reduced.

(20 marks)

1.5 Hyperbilirubinaemia occurs as a result of competition on protein. Explain.

(20 marks)

02. A 75-year old female was admitted to the hospital with exacerbation of heart failure. Her past medical history includes Heart failure (HF), Hypertension, Dyslipidaemia, and Ischaemic Heart Disease (IHD).

Her medication history;

Enalapril 5mg daily

Furosemide 40mg daily

Metoprolol XL 23.75mg daily

Atovastatin 40mg daily

Isosorbide mono nitrate (ISMN) SR 60 mg bd

GTN 600mcg s/l sos

Meloxicam 7.5mg sos

2.1 Mention which drugs in the above list are indicated to manage her conditions given in the table. (30 marks)

(Note that some drugs are used to manage multiple conditions and some conditions are managed with more than one drug)

Hypertension	
IHD	
HF	
Dyslipidaemia	

2.2 Name the drug prescribed without a clear indication for her? (05 marks)

2.3 Indicate whether the drug you named in 2.2 is suitable for her? Explain the reasons. (30 marks)

2.4 Comment on the dosing frequency of ISMN. (20 marks)

2.5 Name the drug which is not mentioned in the list but should be given for the management of her IHD? (15 marks)

03. IV fluids are administered to patients with inadequate oral intake for daily requirements.

3.1 List **four** risks of an IV line in the administration of fluids and electrolytes to a patient. (20 marks)

3.2 How can you monitor the hydration status of a patient? (20 marks)

3.3 List **four** signs of hyperkalemia. (20 marks)

3.4 Briefly describe different methods of management of hyperkalemia? (30 marks)

3.5 State the reason why hyperkalemia is life-threatening? (10 marks)

04. Pregnant, geriatric and pediatric patients need special care from the health care professionals in order to ensure safe drug use.

4.1 List **five** contributing factors for drug related problems among geriatric patients. (20 marks)

4.2 Explain reasons of high risk systemic absorption from topical route of drug administration in pediatric patients when compared to adults. (20 marks)

4.3 What is meant by "teratogenic agents"? (10 marks)

4.4 Name **four** teratogenicity testing methods employed in research. (20 marks)

4.5 Briefly describe the role of a clinical pharmacist in the safe use of medicines among pediatric patients. (30 marks)

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