



Faculty of Medicine, University of Ruhuna
Third Examination for Medical Degrees (Part II) May 2023
Pharmacology Paper I
Wednesday 10th May 2023

Answer all 05 questions

Answer each question in a separate book

(9.00 a.m. - 11.30 a.m.) 2 ½ hours

1.

- 1.1. List **three (03)** groups of antidepressants with an example to each (30 marks)
- 1.2. Write an antidepressant drug group which is most suitable to treat a patient with depression having suicidal thoughts (10 marks)
- 1.3. Describe the mechanism of action of the drug group you mentioned in 1.2 (35 marks)
- 1.4. Write **two (02)** indications for lithium therapy (10 marks)
- 1.5. List **three (03)** investigations that should be done before starting lithium therapy (15 marks)

2. Angiotensin Converting Enzyme Inhibitors (ACEI) are considered as the main stay of treatment for hypertension.

- 2.1. List **five (05)** benefits of ACEI other than its effect on blood pressure (25 marks)
- 2.2. Write **three (03)** conditions you would exclude before commencing ACEI (25 marks)
- 2.3. "ACEI are better than angiotensin receptor blockers". Comment on this statement giving reasons (15 marks)
- 2.4. State **three (03)** other major drug groups used in the treatment of hypertension (15 marks)
- 2.5. Explain the scientific rationale for dual therapy in hypertension at its' initial stage (20 marks)

3. A 64 year-old man is admitted with severe central chest pain for four hours. On examination, he is in pain, pulse rate is 100 bpm, blood pressure is 154/92 mmHg. Rest of the examination is unremarkable. His ECG reveals ST elevation in anterior leads.

- 3.1. What is the diagnosis of this patient? (10 marks)
- 3.2. Describe the medical management within first 24 hours of this patient (40 marks)
- 3.3. On day four of the admission, the patient is fit to be discharged.
List **five (05)** classes of drugs with survival benefit he should be prescribed (30 marks)
- 3.4. Describe the pharmacological action of **two (02)** of the drugs stated in 3.3 (20 marks)

4. A 72 year-old woman with diabetes and chronic lymphoedema admits with painful swelling of the right lower limb. She also complains of fever and anorexia.

Results of the investigations are as follows;

Full blood count	-	neutrophil leukocytosis
C Reactive protein	-	128 mg/L (normal < 6 mg/L)
Blood culture	-	methicillin sensitive <i>Staphylococcus aureus</i>
Random blood glucose	-	320 mg/dL
Ultrasound scan of right lower limb	-	no evidence of deep vein thrombosis

- 4.1. What is the clinical diagnosis of her presentation? (10 marks)
- 4.2. Write **three (03)** antibiotics which could be prescribed to treat her condition (15 marks)
- 4.3. Describe the mechanism of action of one of the antibiotics stated in 4.2 (30 marks)
- 4.4. When an intravenous antibiotic stated above is administered, she develops severe itchy rash with wheals. She reports faintishness. Her blood pressure is 80/50 mmHg.
- 4.4.1. What is the clinical condition she has developed? (10 marks)
- 4.4.2. Write **three (03)** immediate steps of management of the condition stated in 4.4.1 (15 marks)
- 4.4.3. State an alternative therapy you would suggest to treat her condition stated in 4.1 explaining the pharmacological basis (20 marks)

5.

5.1.

- 5.1.1. Write **four (04)** insulin types based on the duration of action with an example to each (20 marks)
- 5.1.2. List **two (02)** adverse effects of long-term insulin injection (10 marks)
- 5.1.3. Briefly explain how you would avoid adverse effects mentioned in 5.1.2 (20 marks)

5.2.

- 5.2.1. List **four (04)** pharmacokinetic processes (10 marks)
- 5.2.2. Define the term half-life of a drug (10 marks)
- 5.2.3. Briefly describe the clinical significance of plasma half-life of a drug (30 marks)