



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES
DEPARTMENT OF PHARMACY
SECOND BPHARM PART I EXAMINATION – NOVEMBER/DECEMBER 2023
PH 2134 PATHOLOGY AND PHARMACOLOGY I – SEQ PAPER

TIME: THREE HOURS

INSTRUCTIONS

- There are six questions in Part A, B, C, D and E of 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.

- 1.1. Define pharmacokinetics. (10 marks)
- 1.2. Briefly explain the influence of pH on drug absorption. (25 marks)
- 1.3. Differentiate between zero-order and first-order kinetics in drug metabolism, using appropriate graphical illustrations. (20 marks)
- 1.4. Differentiate between drug potency and drug efficacy. (15 marks)
- 1.5. Explain the mechanism of action of competitive and non-competitive antagonists at receptor sites, highlighting their differences. Provide appropriate illustrations of dose-response curves. (30 marks)

2.

- 2.1. Briefly describe the three types of adrenergic agonists based on their mechanism of action and give one drug for each category. (25 marks)
- 2.2. Compare and contrast the pharmacological effects of alpha and beta-adrenergic agonists. (25 marks)
- 2.3. State five therapeutic uses of propranolol. (10 marks)
- 2.4. Briefly describe the mechanism of action of propranolol in the cardiovascular system. (20 marks)
- 2.5. List five major adverse drug reactions of propranolol. (10 marks)
- 2.6. State three drugs interact with propranolol. (10 marks)

3.

- 3.1. Explain the mechanism of action of hydrochlorothiazide. (20 marks)
- 3.2. List four therapeutic uses of hydrochlorothiazide. (10 marks)

- 3.3. Briefly explain the rationale behind using spironolactone in combination with hydrochlorothiazide. (20 marks)

PART B

- 3.4. Mention two different groups of vasodilators with one example for each. (20 marks)
- 3.5. Briefly explain the mechanism of action of phosphodiesterase inhibitors with more common indication. (30 marks)
4. A 56-year-old male is diagnosed with hypertension and prescribed enalapril as the anti-hypertensive.
- 4.1. Describe the pharmacological basis of using enalapril to cure hypertension. (25 marks)
- 4.2. Explain the reason for dry cough after long-term using enalapril. (25 marks)
- 4.3. Mention other three indications of this drug. (30 marks)
- 4.4. Mention two other drug classes which are used to treat hypertension addition to the classes mentioned in 3.4 and 4.2 with one example. (20 marks)

PART C

- 5.
- 5.1. What is homeostasis? (10 marks)
- 5.2. List five causes of cell injury giving one example for each cause. (30 marks)
- 5.3. Compare and contrast features of necrosis and apoptosis. (30 marks)
- 5.4. List five effects of acute inflammation. (30 marks)
- 6.
- 6.1. Briefly describe the initiation of carcinogenesis. (25 marks)

PART D

- 6.2. State one example for each of the following external defenses in the human body.
- 6.2.1. Physical barriers (05 marks)
- 6.2.2. Chemical barriers (05 marks)
- 6.2.3. Microbiological barriers (05 marks)
- 6.3. State two functions of complements. (10 marks)

PART E

- 6.4. What is type II hypersensitivity reaction? (20 marks)
- 6.5. List the mechanisms of type II hypersensitivity reaction. (15 marks)
- 6.6. List the clinical expressions of type II hypersensitivity reaction. (15 marks)

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