



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

SECOND BPHARM PART I EXAMINATION – JANUARY/FEBRUARY 2023

PH 2134 PATHOLOGY AND PHARMACOLOGY I – SEQ PAPER

TIME: THREE HOURS

INSTRUCTIONS

- There are **six** questions in part **A, B, C, D, E and F** 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

01.

1.1. Pharmacokinetics includes the study of drug absorption, distribution, metabolism and excretion.

1.1.1. What is meant by drug absorption of a drug? **(10 marks)**

1.1.2. List six factors that affect the drug absorption of an oral tablet. **(24 marks)**

1.1.3. Name four reactions involved in Phase 2 drug metabolism. **(16 marks)**

1.1.4. List five routes of drug elimination. **(10 marks)**

1.2. Briefly explain three types of drug interactions that occurs which are related to drug absorption giving examples. **(30 marks)**

1.3. Write one example of drug/food interaction and state the effect of that interaction. **(10 marks)**

02.

2.1. Write two examples of the following adrenergic drug types. **(15 marks)**

2.1.1. Direct-acting adrenergic agonist

2.1.2. Indirect-acting adrenergic agonist

2.1.3. Mixed-acting adrenergic agonist

2.2. Name five side effects of adrenergic agonists. **(10 marks)**

2.3. Write four therapeutic uses of alpha-adrenergic blockers. **(10 marks)**

2.4. Write three pharmacological effects that can be seen upon each beta 1 and beta 2 receptor activation. **(15 marks)**

PART B

- 2.5. Name three medications belong to organic nitrates. (07 marks)
- 2.6. Describe the mechanism of action of organic nitrates. (18 marks)

PART C

- 2.7. Briefly explain the mechanism of action of indirect acting cholinergic agonist (reversible). (25 marks)

03.

3.1.

- 3.1.1. State one example for loop diuretics. (05 marks)
- 3.1.2. Briefly explain the mechanism of action of loop diuretics. (30 marks)

3.2.

- 3.2.1. List two drug classes other than diuretics with one example for each, recommended in the treatment of hypertension. (20 marks)
- 3.2.2. Describe the mechanism of action of direct acting vasodilators. (30 marks)
- 3.2.3. Anti-hypertensive drugs can cause the following electrolyte abnormalities. Name one example each for the below abnormalities. (15 marks)

- a. Hypokalemia
- b. Hyperkalemia
- c. Hyponatremia

04.

- 4.1. List four types of lipoproteins in correct order of increasing density. (10 marks)
- 4.2. Briefly explain the role of statins in management of hyperlipidemia. (25 marks)
- 4.3. Mention two contraindications of HMG –COA reductase inhibitors. (10 marks)
- 4.4. Write short notes on following topics.
- 4.4.1. Grey-baby syndrome (15 marks)
 - 4.4.2. Risk of Kernicterus in neonates (20 marks)
 - 4.4.3. Geriatric Pharmacodynamics (20 marks)

PART D

05.

- 5.1. Define inflammation. (15 marks)
- 5.2. List cardinal signs of inflammation. (15 marks)
- 5.3. Describe cellular events in the process of inflammation. (40 marks)
- 5.4. Briefly describe dystrophic calcification. (30 marks)

06.

- 6.1. List five carcinogenic agents. (10 marks)
- 6.2. List five cellular changes in malignant neoplastic cells. (15 marks)

PART E

- 6.3. State four functions of complement system. (25 marks)

PART F

- 6.4. List two clinical expressions of type II hypersensitivity reaction. (10 marks)
- 6.5. Briefly discuss the action of preformed vasoactive amines released in anaphylactic reaction. (40 marks)

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