



UNIVERSITY OF RUHUNA – FACULTY OF ALLIED HEALTH SCIENCES

DEPARTMENT OF PHARMACY

FIRST BPHARM PART I EXAMINATION – JULY/AUGUST 2026

PH 1132 PHARMACEUTICS IA – SEQ

TIME: TWO HOURS

INSTRUCTIONS

- There are **four** questions in parts **A, B,** and **C** 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 the term "Pharmacy" as a health profession. **(10 marks)**
- 1.2. List the seven roles of a pharmacist described in the WHO/FIP "seven-star" concept. **(20 marks)**
- 1.3. Describe how the pharmacist's role changed with the historical transition from the Empiric Era to the Patient Care Era. **(20 marks)**
- 1.4. Differentiate between tertiary, secondary, and primary sources of drug information. **(25 marks)**
- 1.5. Describe how a pharmacist act as a "decision-maker" in healthcare sector. **(25 marks)**

2.

- 2.1. State the three systems of measurement historically used in pharmacy, and name the standard (base) unit used to measure weight in each system. **(15 marks)**
- 2.2. Briefly describe the importance of correctly writing decimal numbers in clinical practice, with specific reference to the use of trailing zeros and naked decimal points. **(20 marks)**
- 2.3. A prescriber orders 300 mg of a drug from a stock solution labelled as a 15% w/v injection. Calculate the volume, in millilitres, that must be drawn up to obtain the prescribed dose, showing all working formulae. **(15 marks)**
- 2.4. A doctor prescribes 375 mg of an antibiotic suspension. The suspension is available as 125 mg in 5 mL. Calculate the volume, in millilitres, required to administer the prescribed dose. **(15 marks)**
- 2.5. The average adult dose of Drug A is 350 mg. Calculate the recommended dose of Drug A for an 8-year-old child (body weight 20 kg) using both Young's formula and Clark's formula. State which dose would be safer for the child and give one reason for your decision. **(35 marks)**

3.

- 3.1. Define the term "micromeritics", and state two ways in which particle size influences the performance of a pharmaceutical dosage form. (10 marks)
- 3.2. List five main factors that influence the flow properties of powders. (20 marks)
- 3.3. Explain the principle of the Coulter counter method for determining particle volume. (20 marks)

PART B

- 3.4. Define the following concentration expressions used in pharmacy: molarity, molality, percentage weight by weight (% w/w), and percentage volume by volume (% v/v). (10 marks)
- 3.5. Discuss four advantages and four challenges of solutions as pharmaceutical dosage forms. (20 marks)
- 3.6. Briefly explain the pharmaceutical importance of the distribution coefficient of drug molecules. (20 marks)

PART C

4.

- 4.1. Define a solution and identify its essential components. (10 marks)
- 4.2. Differentiate between a true solution and a colloidal solution. (20 marks)
- 4.3. State five factors that affect the solubility of a substance. (15 marks)
- 4.4. Briefly explain the mechanism of action of an acetate buffer. (20 marks)
- 4.5. The following prescription containing ephedrine sulfate is to be prepared as an isotonic solution. Calculate the quantity of sodium chloride (in grams) required to make the formulation isotonic. The sodium chloride equivalent (E value) of ephedrine sulfate is 0.23. (20 marks)

Ephedrine sulfate	0.45 g
Sodium chloride	q.s.
Purified water	ad 75 mL

- 4.6. List five mechanisms of chemical degradation of drugs. (15 marks)

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