

M. Sc. CLINICAL RESEARCH
SEMESTER - II EXAMINATION, JUNE – 2026
(2025 Batch)

(CMCR512) PHARMACOLOGY

[Time Allotted: 3:00 Hours]

[Max. Marks: 100]

Note: Read all the instructions carefully

Answer all questions in serial order, Draw suitable diagrams wherever necessary

- Q. 1. Objective type questions: (Attempt All)** **(10 x 02 = 20)**
 (Very short/ Short answer/ MCQ/ One liners/ Fill in the blanks/ True/False)
- a. Define carcinogenicity. Give two examples of carcinogenic drugs (PO1; CO2)
 - b. Therapeutic index and its calculation (PO1; CO2)
 - c. Enumerate the drugs used in treatment of asthma (PO1; CO2)
 - d. Define pharmacovigilance (PO1; CO2)
 - e. Enumerate the drugs used in the treatment of hypertension (PO1; CO2)
 - f. Ames' test (PO1, 3; CO3)
 - g. Bioequivalence (PO1; CO2)
 - h. Explain the terms pharmacokinetics and pharmacodynamics (PO1; CO2)
 - i. Explain the importance of real world clinical studies (PO1; CO1)
 - j. Explain Periodic Safety Update Reports (PO2; CO1)
- Q. 2. Short notes / Short Answer Type (Attempt any five out of seven)** **(5 x 4 = 20)**
- a. Assessment of adverse drug reactions in clinical trials (PO2, 3; CO1)
 - b. What is proteomics? Explain its importance and application in drug development and therapeutics (PO2; CO4)
 - c. Chronic toxicity studies (PO1; CO3)
 - d. Combinatorial chemistry library (PO2; CO1)
 - e. Drug databases and their importance (PO2; CO1)
 - f. Good Clinical Practices for clinical research (PO3, 5; CO1, 4)
 - g. Define teratogenicity and give 2 examples of teratogenic drugs. When are preclinical teratogenic studies required for drugs. (PO1; CO2)
- Q. 3. Structured Question (Attempt any three out of four)** **(3 x 10 = 30)**
- a. Explain the importance of first in human dose calculation. Enumerate the advantages and disadvantages of NOAEL and MABEL (PO1,3; CO5)
 - b. Explain in detail Goldblatt's method for testing antihypertensive drugs (PO1; CO3)
 - c. Explain the purpose and general principles of special toxicity studies. Describe the mutagenicity studies (PO1,2; CO1,3)
 - d. What is Pharmacogenetics and pharmacogenomics? Explain its importance in drug development and therapeutics (PO1; CO1,4)
- Q. 4. Long Answer/Essay type (Attempt any two out of three)** **(2 x 15 = 30)**
- a. Explain in detail how a new drug is discovered, its preclinical and clinical development, and marketing and post-marketing activities during the time a drug is in the market (PO1,3; CO1)
 - b. Enumerate antiepileptic drugs. Classify the various methods used for screening of antiepileptic drugs. Describe in detail any one method (PO1,3; CO2,3)
 - c. What are the 4 'Rs' in animal experimentation? How can you reduce the use of animals in research. Explain the advantages, disadvantages and utility of in-vitro, in-vivo and in-silico methods in drug development? (PO1,5; CO3)