

M.Sc. DEGREE END SEMESTER EXAMINATION- MARCH 2026
SEMESTER 4 : PHARMACEUTICAL CHEMISTRY
COURSE : 24P4CPHT14EL : ADVANCES IN PHARMACEUTICAL OPERATIONS
(For Regular - 2024 Admission)

Time : Three Hours

Max. Weights: 30

PART A**Answer any 8 questions****Weight: 1**

- | | | |
|-----|--|--------------------|
| 1. | What is HLB scale? | (R, CO 3) |
| 2. | Explain one advantage of tablets being enteric coated | (E, CO 1) |
| 3. | What are the limitations of plastic based drug packaging? | (U, CO 2) |
| 4. | What is Indian Pharmacopoeia? Who publishes it? | (U, CO 4) |
| 5. | What is the significance of He purging in HPLC? | (R, CO 3) |
| 6. | What is copyright ? | (U, CO 4) |
| 7. | Explain the terms retention time, retention factor and selectivity factor in chromatography. | (R, CO 3) |
| 8. | What is PET? | (R, CO 5) |
| 9. | What is bulk erosion and surface erosion in biodegradable polymers? | (E, CO 1) |
| 10. | What are any two quality control tests performed on tablets? | (A, CO 1) |
| | | (1 x 8 = 8) |

PART B**Answer any 6 questions****Weights: 2**

- | | | |
|-----|--|---------------------|
| 11. | Illustrate and explain the mechanism of liposome based drug delivery. | (E, CO 1) |
| 12. | Explain why a suspension undergo flocculation using the concept of surface energy. | (A, CO 3) |
| 13. | Give an account of the general methods for increasing the solubility of a drug. | (U, CO 2) |
| 14. | Explain how controlled flocculation can be brought about using polymers. | (U, CO 3) |
| 15. | Give an account of fractional distillation | (U, CO 5) |
| 16. | Give two disadvantages of suppositories? How are they prepared? | (E, CO 1) |
| 17. | Explain a controlled drug delivery system | (An, CO 1) |
| 18. | Bring out the importance of containers in storage and stability testing of drugs. | (An, CO 2) |
| | | (2 x 6 = 12) |

PART C**Answer any 2 questions****Weights: 5**

- | | | |
|-----|--|---------------------|
| 19. | a) Give the principle and working of a GCMS. What is the advantage of GCMS over GC? What are the applications in Pharmaceutical Industry? b) Explain the principle of separation and the applications of gel electrophoresis. | (U, CO 3) |
| 20. | Elaborate on Theories of Dissolution and dissolution models | (U, CO 1) |
| 21. | Explain in detail about Phase I , Phase II and Phase III clinical trials | (U, CO 4) |
| 22. | Describe the working of counter current extractor and multiple evaporator. | (U, CO 5) |
| | | (5 x 2 = 10) |

OBE: Questions to Course Outcome Mapping

| CO | Course Outcome Description | CL | Questions | Total Wt. |
|------|--|----|--------------------------|-----------|
| CO 1 | Describe the drug delivery systems and pharmaceutical dosage forms | U | 2, 9, 10, 11, 16, 17, 20 | 14 |
| CO 2 | Explain preformulation studies and stability testing of drugs. | R | 3, 13, 18 | 5 |
| CO 3 | Illustrate the application of colloids and chromatography in pharmaceutical chemistry. | A | 1, 5, 7, 12, 14, 19 | 12 |
| CO 4 | Describe the principles of forensic pharmacy. | R | 4, 6, 21 | 7 |
| CO 5 | Explain different methods of extraction and application of radiopharmaceuticals. | R | 8, 15, 22 | 8 |

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;