

This question paper contains 3 printed pages]

JM—33—2025

FACULTY OF SCIENCE AND TECHNOLOGY

M. Pharm. (Second Semester) EXAMINATION

FEBRUARY/MARCH, 2026

(CBCS PCI)

COMPUTER AIDED DRUG DELIVERY SYSTEM

Paper MPH-203T

(Monday, 2-3-2026)

Time : 2.00 p.m. to 5.00 p.m.

Time—3 Hours

Maximum Marks—75

N.B. :— (i) All questions are compulsory.

(ii) Answer to the point only.

(iii) Figures to the right indicate full marks.

1. Answer the following :

10×2=20

(a) Define the term Robotics in CADDS.

(b) What is meant by computer simulation ?

(c) Define the term AI.

(d) What is sensitive analysis ?

P.T.O.

- (e) What is the need of IVIVC study ?
- (f) Define the term QbD.
- (g) What is meant by artificial neural network ?
- (h) What is optimal design ?
- (i) Define the term biowaiver considerations.
- (j) Enlist various applications of computer in patents.

2. Solve any *two* :

2×10=20

- (a) Describe in detail Robotics and computational fluid dynamics and give its pharmaceutical applications.
- (b) Explain factorial design. Discuss the various optimization techniques in pharmaceutical formulation and processing.
- (c) Explain in detail computer simulation in pharmacokinetics and pharmacodynamic system.

3. Solve any *seven* :

7×5=35

- (a) Explain the examples of QbD approach (ICHQ) and explain quality risk assessment.
- (b) Describe descriptive Vs mechanistic modeling.

- (c) Describe in detail about Gastrointestinal absorption simulation.
- (d) Explain the uses of computer graphics in computer aided drug development.
- (e) What is mechanism of BBB choline transports and application of adrenaline transfer.
- (f) Describe the role of P-GP efflux transporter in drug disposition.
- (g) Explain the role of computers in clinical data collection and management.
- (h) Describe various statistical modeling in pharmaceutical research and development.
- (i) Explain the current challenges and future directions of artificial intelligence in pharmacy.