

# Question Paper

Exam Date & Time: 28-Dec-2023 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

### Drug Delivery Systems [PCE-MPH102T - S3]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Explain the various techniques for 3D printing of pharmaceuticals (10)
- 2) Classify and describe the features of various implantable infusion pumps (10)
- 3) What is the principle involved in the design of oral Osmotic pumps? Explain any THREE types of oral Osmotic pumps. (10)
- 4) Mention different types of Ocular Controlled Drug Delivery Systems. Briefly explain any THREE types of Ocular Inserts (10)
- 5) Discuss different evaluation tests for Gastro-retentive dosage forms (10)

#### SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) What are different Advanced Transdermal Drug Delivery techniques? Explain any TWO techniques in detail (5)
- 7) Discuss the various theories of mucoadhesion (5)
- 8) Discuss the approaches for the oral delivery of proteins and peptides. (5)
- 9) Write a note on single shot vaccines (5)
- 10) Discuss the physicochemical approaches for SR/ CR formulations (5)

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