

Exam Date & Time: 14-Dec-2022 (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]

**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 intra uterine devices. (10)
- 3) Explain feedback regulated drug delivery systems (10)
- 4) Discuss different types of transdermal drug delivery systems (10)
- 5) Explain various 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 smart polymers? Classify the various types of smart polymers with examples. (5)
- 7) Discuss the approaches for nasal delivery of proteins and peptides (5)
- 8) What are vaccine adjuvants? Write the advantages of mucosal delivery of vaccines (5)
- 9) Discuss the factors to be considered in the development of mucoadhesive vaginal drug delivery systems. (5)
- 10) Write the principle of - i) Ion exchange resin complex dosage forms and ii) Osmotic pumps (5)

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