

Question Paper

Exam Date & Time: 01-Dec-2017 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017**

PROGRAM : MPHARM SEMESTER I

DATE : 01-12-2107

TIME : 2:00PM - 5:00PM

Novel Drug Delivery Systems [PCE-MIP103T]

Marks: 50

Duration: 180 mins.

a

Answer all the questions.

Answer the following (8Q x 5 marks = 40 marks)

- 1) Explain any two glucose responsive insulin delivery systems. (5)
- 2) Define pulsatile drug delivery system. What is the rationale behind developing pulsatile drug delivery system? (5)
- 3) Explain different polymerization techniques. (5)
- 4) Write a note on the various approaches of colon specific drug delivery. (5)
- 5) Explain the construction of Franz diffusion cell with the help of diagram. (5)
- 6) Differentiate between liposomes and niosomes. (5)
- 7) Explain the role of 3D printing for designing customized drug delivery systems. (5)
- 8) Discuss methods for the determination of protein stability and formulation testing. (5)

b

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) Explain the mechanism of drug penetration through skin using iontophoretic technique. (2)
 - A)
 - B) Write the steps of DNA cloning process. (2)
 - C) How nano-based sunscreens are beneficial? (2)

- D) Why enzymatic degradation is considered as a prime factor in nasal drug delivery? (2)
- E) Classify penetration enhancers with one example for each. (2)

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