

## Question Paper

Exam Date & Time: 29-Nov-2017 (02:00 PM - 05:00 PM)



### MANIPAL UNIVERSITY

**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES  
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017  
PROGRAM: MPHARM SEMESTER 1  
DATE: 29/11/2017  
TIME: 2:00PM - 5:00PM**

**Pharmaceutical Formulation Development [PCE-MIP102T]**

**Marks: 50**

**Duration: 180 mins.**

**Answer all the questions.**

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

- 1) Discuss on evaluation of organoleptic properties of an API during pre-formulation stage. (5)
- 2) Explain the principle of thermo-gravimetric analysis. (5)
- 3) Explain the phase solubility diagram. (5)
- 4) Mention any five approaches to obtain sink condition in dissolution study. (5)
- 5) Enlist any THREE excipients used commonly in sterile preparations. Discuss important points to be considered while deciding Tonicity for sterile product. (5)
- 6) Define Dissolution. Give any four importance of dissolution studies. (5)
- 7) What is the importance of stability studies? Briefly explain significant change in a stability study. (5)
- 8) Discuss briefly about stability protocols and data reporting. (5)

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

- 9) Classify the chemical compound based on crystal habit and internal structure. (2)
  - A)
  - B) Oral administration is the most convenient and commonly employed route of drug delivery. Why? (2)
  - C) Mention any two reasons for the dissolution study of dosage forms. (2)
  - D) Mention any two strategies employed for formulating poorly soluble drugs as parenteral preparations. (2)
  - E) Give any two importance of degradation kinetics (2)

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# Question Paper

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



## MANIPAL UNIVERSITY

**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) Write the steps of DNA cloning process. (2)
  - B) How nano-based sunscreens are beneficial? (2)
  - C) Why enzymatic degradation is considered as a prime factor in nasal drug delivery? (2)
  - D) Classify penetration enhancers with one example for each. (2)

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