

# Question Paper

Exam Date & Time: 05-May-2018 (02:00 PM - 05:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES

END SEMESTER THEORY EXAMINATIONS- MAY 2018

PROGRAM: MPHARM SEMESTER 2 (PHARMACEUTICS and INDUSTRIAL PHARMACY)

DATE: 05/05/2018

TIME: 2:00 PM - 5:00 PM

Advanced Biopharmaceutics and Pharmacokinetics [PCE-MPH202T]

Marks: 50

Duration: 180 mins.

**a**

**Answer all the questions.**

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

- 1) Explain the limitations of pH partition hypothesis. (5)
- 2) Discuss the construction and working of USP apparatus 1 for dissolution testing. (5)
- 3) Explain the effect of polymorphism of drugs on their absorption. (5)
- 4) Explain the effect of Binders and Disintegrants on the dissolution of tablets. (5)
- 5) Explain the characteristic features of active transport of drugs. (5)
- 6) Describe the Pharmacokinetics of one compartment model for an IV bolus drug administration. Support your answer with appropriate graphs and equations. (5)
- 7) What are the causes of nonlinear pharmacokinetics of a drug? Explain with suitable graphs. (5)
- 8) Write and explain the importance of BCS classification system. Give examples. (5)

**b**

**Answer all the questions.**

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

- 9) How Clearance and Volume of Distribution related? How useful this relation is? (2)  
A)

- B) What is the loading dose required for drug A if Target concentration is 10 mg/L,  $V_d$  is 0.75 L/kg and Patient's weight is 75 kg (2)
- C) Show in a graph the Plasma concentration of drug, when the Rate of infusion of drug is equal to the rate of elimination? (2)
- D) Why apparent volume of distribution tends to decrease for protein drugs? (2)
- E) Why the pharmacokinetic parameters calculated using plasma data does not represent the actual pharmacokinetics of the drug from targeted delivery systems? (2)

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