

Question Paper

Exam Date & Time: 14-Jun-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Modern Bioanalytical Techniques [PCH-MPA202T -S2]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

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

- 1) Explain the rate limiting steps in drug adsorption. Add a note on dissolution and solubility (5)
 - A)
 - B) Explain the compendial methods for dissolution testing as per IP and add a note on dissolution profile comparison. (5)
- 2) Discuss the various pharmacodynamic and drug considerations in design of a drug product. (5)
 - A)
 - B) Explain the Protein Precipitation method in detail used for sample preparation in biopharmaceutical analysis. (5)
- 3) What are transcellular and paracellular transport in drug transport mechanism? Explain active transport process in drug absorption with suitable example. (5)
 - A)
 - B) Explain permeability of drug by artificial membrane and cell culture technique. (5)
- 4) Explain the in-vitro system microsomal assay. How cytochrome P 450 mediates the drug interactions? Explain with suitable example. 7 Marks (10)
Write the principles of toxicokinetic studies in preclinical stage. 3 Marks
- 5) What type of studies can be carried out in Biosafety lab II and IV?. Mention the requirements for each of them. (5)
 - a)
 - b) How radioactive materials needs to be handled in a lab? (5)

SECTION - B

Answer all the questions.

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

- 6) Explain crossover study design and replicated crossover study design in bioequivalence studies. (5)
- 7) Explain the factors affecting on protein drug binding on pharmacokinetically. (5)
- 8) Why phenol red is used in cell culture practice? What are its disadvantages? (5)
- 9) What is the role played by serum in cell culture media? (5)
- 10) Classify drug metabolic pathways giving examples. (5)

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