

Exam Date & Time: 15-Jul-2022 (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]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

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

- 1) Explain liquid-liquid extraction and protein precipitation as sample preparation methods in biopharmaceutical analysis. (10)
- 2) Explain the rate limiting steps in drug adsorption and the compendial methods for dissolution testing as per IP (10)
- 3) What is Solubility? Explain the methods of solubility determination. (5)
 - A)
 - B) Explain various methods to study the permeability of drug by in-situ. (5)
- 4) What are the aim of toxicokinetic studies? Explain the general principles to be considered in toxicokinetic studies in preclinical stage. (10)
- 5) What are the advantages and disadvantages of cell culture techniques? (5)
 - A)
 - B) Explain the various types of Biosafety levels. (5)

SECTION - B

Answer all the questions.

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

- 6) What are biosimilarity and interchangeability? Write a note on FDA recommendation on factors that must be considered in assessing biosimilarity (5)
- 7) Explain the principle and advantages of human liver microsomal assay (5)
- 8) Write in detail about the applications of flow cytometry (5)
- 9) Explain the principle, advantages and disadvantages of Trypan blue dye exclusion assay (5)
- 10) Write in detail about the precautions to be taken during cryopreservation of samples. (5)