

Question Paper

Exam Date & Time: 21-May-2024 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

PHARMACEUTICAL PROCESS CHEMISTRY [PCH-MPC204T-S1]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

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

- 1) a) Define process chemistry and discuss its role in the pharmaceutical industry. 5 marks (10)
b) Explain the concept of the E-factor and its importance in chemical Process. Provide a case study as an example. 5 marks
- 2) a) Define catalytic hydrogenation. Mention the types and discuss the advantages and limitations of each catalyst type. 5 marks (10)
b) Write a note on the applications of kinetics in chemical reactions. 5 marks
- 3) Discuss on the salt selection strategy in drug development. (10)
- 4) a. What is crystallization? Write a note on its importance and applications. (10)
b. Enlist various crystal properties and explain the basic crystal properties such as solubility, supersaturation, metastable zone and induction time.
- 5) What are nitrating agents? Discuss about kinetics and mechanism of aromatic nitration. (10)

SECTION - B

Answer all the questions.

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

- 6) Differentiate NaBH_4 & LiAlH_4 as reducing agents. (5)
- 7) Write a note on characteristics of cost-effective route. (5)
- 8) What are greenhouse gases? Provide examples and describe their sources and impacts on climate change. (5)
- 9) Explain about the types of fires. (5)
- 10) Discuss about ISO-14001. (5)

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