

Exam Date & Time: 20-Jul-2022 (10:00 AM - 01:00 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) Enlist the principles of process green chemistry (5)  
A)  
B) Discuss the various stages in generating reproducible IPCs (5)
- 2) Explain the various process design reasons for selection of a solvent (10)
- 3) Explain the basic crystal properties such as polymorphism, Inclusion and Occlusion (5)  
A)  
B) Explain any two crystallization process options (5)
- 4) Explain batch nitration and continuous nitration. With neat diagram explain the construction and working of two nitrators (10)
- 5) What is RPKA? Explain in detail. Give its importance. Discuss route selection and characteristics of expedient routes (10)

#### SECTION - B

Answer all the questions.

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

- 6) Write a note on pharmaceutical and biological effects of salt form (5)
- 7) What are the requirements for PPE and add a note on types of PPE (5)
- 8) What is catalytic asymmetric hydrogenation? Explain heterogeneous catalytic hydrogenation with examples (5)
- 9) Explain ozonolysis with suitable example (5)
- 10) Explain the processes by which effluents are treated in a pharmaceutical organization. (5)