

Exam Date &amp; Time: 27-Mar-2021 (01:30 PM - 04:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

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

### Advanced Organic Chemistry I [PCH-MPC102T - S2]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

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

- 1) Differentiate Suzuki with Heck reaction. Discuss with an example the mechanism involved in Heck reaction. What is the reason for adding a base in Heck reaction? (10)
- 2) Discuss the retro synthetic analysis and its forward synthesis of ranitidine and what are synthons? Classify them with examples giving their synthetic equivalents. (10)
- 3) a) Write the names and structures of benzylated azoles and give the method of preparation of one of them. (10)  
b) Give the method of preparations and reactions of pyrido pyrimidines .
- 4) a) Explain the formation and synthetic applications of carbocations. (10)  
b) Explain the properties and synthetic applications and safety precautions in handling NBS.
- 5) a) Explain the various methods for protection for amino group. (10)  
b) Explain the different types of reaction mechanisms.

#### SECTION - B

Answer all the questions.

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

- 6) Give a method of synthesis and any one reaction for the following:  
a) Benzimidazole b) pyridine-N-oxide (5)
- 7) Give the properties and the synthetic applications of sodium borohydride. What are the advantages of sodium borohydride over Lithium aluminium hydride? (5)
- 8) Give an example for birch and MPV reduction. (5)
- 9) Describe the synthesis and reactions of benzo pyrylium and benzo pyrones . (5)
- 10) Draw the structures for the following IUPAC names. (5)
  - a) thieno[3,2-b]pyridine
  - b) benzo[b]pyran-4-one
  - c) pyrazino[2,3-d]pyradazine
  - d) naphtho[2,3-g]azulene
  - e) dibenzo[a,j]anthracene