

Exam Date & Time: 14-Dec-2022 (10:00 AM - 01:00 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) a) Propose the reaction mechanism for Wolff-Kishner reduction with an example. 5 marks (10)  
b) Explain with an example the role of base in Suzuki and Heck reaction. 5 marks
- 2) What are synthons ? Classify them with two examples giving their synthetic equivalents. Explain the retro synthesis and forward synthesis of Ranitidine . (10)
- 3) Write the names and structures of benzanelated azoles giving the method of preparation of one of them and discuss the tautomerism of biological purines . (10)
- 4) a) Explain the different types of reaction mechanisms with suitable examples. (10)  
b) Explain the methods of generation of carbocations
- 5) Explain the applications, properties and safety conditions in handling NBS, potassium t-butoxide and DMAP. (10)

### SECTION - B

**Answer all the questions.**

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

- 6) Write any one method of preparation and give reactions of pyriliium. (5)
- 7) Give any one method of synthesis of quinoline. Mention its EAS reactions. (5)
- 8) Comment on the following:  
a) Cross-coupling reactions and their advantages (5)  
b) Multiple component reactions with an example
- 9) Explain the chemistry of enolates. (5)
- 10) Give the structures for the following IUPAC names. (5)  
a) benzo[c]thiophene b) pyrano[2,3-c]pyrrole  
c) thiino[3,2-b]pyran d) oxazo[3,2-a]azepine  
e) pyrrolo[3,2-d]isoxazole

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