Exam Date & Time: 09-Mar-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]

Marks: 75 **Duration: 180 mins.**

SECTION - A

Answer all the questions.

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

1)	a) What are cross-coupling reactions? Discuss with an example the mechanism involved in Heck Reaction. 6 marks b) What are multicomponent reactions? Mention its advantages with an example. 4 marks	(10)
2)	Explain retrosynthetic analysis and forward synthesis of rosiglitazone. What are control elements?	(10)
3)	Describe the synthesis and chemical reactions of Triazolo and Tetrazolo pyridines and Pyrido pyrimidines.	(10)
4)	a) Explain with mechanism, any one method of synthesis of Pyridine. 5 marks b) Discuss with mechanism the electrophilic substitution reactions of pyridine. 5 marks	(10)
5)	Explain the applications, properties and safety conditions in handling n-butyl lithium, metal catalyst and boron tribromide.	(10)

SECTION - B

Answer all the questions.

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

6)	What are purines? Write its tautomeric forms. How are they synthesized?	(5)
7)	Explain rearrangement reaction and addition reactions with mechanism.	(5)

8) Explain the methods of generation, reactions, stability and synthetic applications of carbocations. (5)

9) What are protecting groups? Give its application. Explain in detail about protection of carbonyl groups. (5)

10) Draw structures for the following IUPAC names.
a) 2H-1,2-benzoxazine b) thieno[3,4-b]furan
c) furo[3,2-d]pyrimidine d) 4H-[1,3]thiazino[3,4-a]azepine
e) imidazo[2,1-b]oxazole (5)

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