Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 08

M.Sc. (Ph. Chemistry) (Sem.–1)

ADVANCED ORGANIC CHEMISTRY INCLUDING HETEROCYCLIC CHEMISTRY

Subject Code : MSPC-101

M.Code : 20501

Date of Examination : 14-01-23

Time : 3 Hrs. **Max. Marks : 80**

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries SIXTEEN marks.**

1. a) What are stereoisomers. Classify them using suitable examples. (2)

   b) Explain about stereospecific reaction using suitable examples. (6)

   c) Give the reaction, mechanism, and application of Oppenauer oxidation. (8)

2. a) Define heterocyclic compounds. Classify them. Discuss the structure, reactivity, method of preparation of pyrrole. (10)

   b) Compare the reactivity of pyrrole, thiophene and thiophene. (6)

3. a) Differentiate between SN_1 and SN_2 type reactions. (6)

   b) Write a note on reaction, mechanism, and applications of Aldol condensation. (10)

4. a) Discuss the method of synthesis and application of pyrimidine. (8)

   b) Write about the conformer of butane. (8)

5. Write the reaction, mechanism and two pharmaceutical application of : (16)

   a) Bayer-Villiger oxidation

   b) Grignard reaction

   c) Perkin condensation.

6. What are elimination reactions. Differentiate between El and E2 elimination using suitable example. Write about factors affecting the elimination reactions. (16)

7. What are pericyclic reactions. Explain 2+2 and 4+2 cycloaddition reaction using suitable examples. (16)

8. a) Write the conformations of cyclohexane. Discuss their structure and stability using suitable evidence for your answer. (8)

   b) Write the method of synthesis and chemical reaction of imidazole. (8)

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.