

Roll No. 

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Total No. of Pages : 01

Total No. of Questions : 08

**M.Sc. (Ph. Chemistry) (Sem.-1)**  
**ADVANCED ORGANIC CHEMISTRY**  
**INCLUDING HETEROCYCLIC CHEMISTRY**

Subject Code : MSPC-101

Paper ID : [E0266]

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. Discuss the  $SN_1$  and  $SN_2$  mechanism in details. Give reaction kinetics and stereochemical evidence and reactivity of alkyl halides towards  $SN_2$  reaction.
2. Name and give the structure of two heterocyclic systems with two and three nitrogen. Explain their method of synthesis and give their reactions.
3. Explain stereospecific and stereo selective reactions with suitable examples.
4. Explain mechanism and stereochemistry of :
  - a) Bayer-Villiger reaction.
  - b) Hoffman reaction.
5. Mechanism of epoxidation.
6. Benzylic acid rearrangement.
7. Grignard reagent and its synthetic applications.
8. Comment on sigmatropic (1,3) rearrangements.