Code No. : 9271

FACULTY OF SCIENCE
M.Sc. II Semester Examination, May/June 2012
CHEMISTRY
Paper – II : Organic Chemistry

Time : 3 Hours] [Max. Marks : 80

***Note**: Answer **all** questions.*

PART – A **(4×8=32 Marks)**

1. a) Draw the conformations of propionaldehyde and 1-butene. Indicate the preferred ones and give reasons.
   b) Write the staggered conformations of possible stereoisomers of stilbene dibromide and indicate the preferred ones. Give reasons.

2. a) Write the S_N1 Ar mechanism. Give evidences.
   b) Write a note on SET mechanism.

3. a) How are free radicals generated ?
   b) Outline the mechanism of :
      i) Benzilic acid rearrangement and ii) Transannular rearrangement.

4. a) Discuss the importance of Hoffmann exhaustive methylation in structure determination.
   b) Outline the synthesis of papaverine.

PART – B **(4×12=48 Marks)**

5. a) Draw the Newmann projection formulae of all conformations of n-butane. Explain their stability with the help of energy diagram. **8**
   b) Write notes on Winstein-Holness equation. **4**

   OR

   c) Draw the staggered conformations of
      i) 1, 1, 2, 2 - tetrabromoethane ii) 1, 2 -dibromo ethane
      iii) 1,2-difluoroethane iv) ethylenechlorohydrin
      v) acetaldehyde and vi) butanone

      Indicate the preferred conformation for each compound and give reasons.

6. a) Explain the nucleophilic substitution reactions involving neighbouring group participation by σ and π bonds.

b) Write the products formed when (2S), (3R) - 3 - bromo - 2 - butanol and (2R), (3S) - 3 - bromo - 2 - butanol are independently treated with HBr.

OR

c) Write notes on :

i) Aliphatic electrophilic substitution

ii) Reactions involving benzyne

iii) S_N2 Ar mechanism.

7. a) Discuss the generation, geometry and reactions involving carbocations. **8**

b) Outline the mechanism of Beckmann rearrangement and give evidences. **4**

OR

c) Write notes on :

i) Baeyer - Villiger oxidation

ii) Favorski rearrangement

iii) Wolf rearrangement

iv) Curtins rearrangement.

8. a) Give a concise account of the structure determination of quinine. **9**

b) What is isoprene rule ? **3**

OR

c) Discuss the structure determination of camphor. **8**

d) Outline the synthesis of β -carotene. **4**