



MCHT 1.2

I Semester M.Sc. Degree Examination, May 2014

CHEMISTRY

Organic Chemistry – I

Time : 3 Hours

Max. Marks : 80

Instruction : Answer Question No. 1 and any four of the remaining questions.

1. Answer **any eight** questions.

(8×2=16)

- What is configuration and conformation ? Explain with example.
- What are enantiomers ? Give one example.
- Write four conditions for aromaticity.
- Write the structure of azulenes and comment on its dipole moment.
- Write any two methods of generation of carbocation.
- Give one example of electrophilic aromatic substitution reaction and mention the electrophile.
- What is anchimeric assistance ? Give example.
- Write the importance of isotopes in determining the reaction mechanism.
- What is Saytzeff's Rule ? Give example.
- What is meant by Linear Free Energy Relationship ?

2. a) Discuss geometrical isomerism in 2-butene.

(4+6+6=16)

b) Explain the conformational analysis of Ethane.

c) Write a note on optical isomerism in biphenyls.

3. a) What are aromatic, non aromatic and antiaromatic compounds ? Give two examples to each.

(5+5+6=16)

b) Discuss the concept of aromaticity and energy level of π -molecular orbitals.

c) Write a note on Huckel's rule and aromaticity.

4. a) Discuss structure and stability of carbocation.

(5+5+6=16)

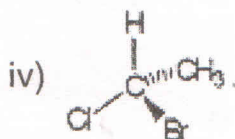
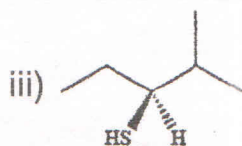
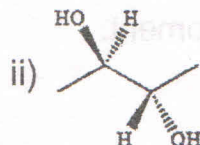
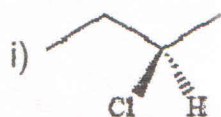
b) What are electrophiles and nucleophiles ? Give two examples each.

c) What is Ortho-Para ratio ? Explain with suitable example.

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5. a) Why S_N1 reaction does not takes place at bridgehead carbon ? (5+5+6=16)
b) Discuss mechanism and stereochemistry of S_Ni reaction.
c) What are significance of σ (substituent constant) and ρ (reaction constant) ?
6. a) Discuss the resolution of racemic mixture. (5+5+6=16)
b) What are allenes ? Explain the condition for allenes to display optical isomerism.
c) Assign the R and S configuration notation for the following compounds.



7. a) How carbanions are generated ? Discuss their geometry. (5+5+6=16)
b) Discuss sulfonation and desulfonation of benzene.
c) Write a note on $E1CB$ reaction.