

Exam.Code:0001
Sub. Code: 17050

2115
B.A./B.Sc. (General) First Semester
Chemistry
Paper – II: Organic Chemistry – A
(Same for B.Sc. Microbial and Food Technology)

Time allowed: 3 Hours

Max. Marks: 22

NOTE: Attempt five questions in all, including Question No. 9 (Unit-V) which is compulsory and selecting one question each from Unit I - IV.

x-x-x

UNIT - I

1. (a) What is Inductive effect? Give its application in stability of carbocations and carbanions?
(b) Discuss the effect of resonance in explaining the relative acid strength of aryl and alkyl carboxylic acids. (2x2)
2. (a) What are Free radicals? Discuss the relative stability of different classes of free radicals.
(b) How do the methods such as 'isotope effect' and 'stereochemical studies' help in determination of reaction mechanism?
(c) Assign formal charge on Methyl Carbanion and dichlorocarbene. (2,1,1)

UNIT-II

3. (a) Give the mechanism of halogenation of alkane.
(b) Give mechanism of Kolbe electrolysis reaction.
(c) Write a note on alternation effect with reference to alkane. (2,1,1)
4. (a) Compare reactivity and selectivity in reference to halogenation of alkane.
(b) Differentiate between clemmenson reduction and wolff kishner reduction by taking suitable example. (2x2)

UNIT - III

5. (a) Draw the structure of erythro and threo isomers of Butane-2,3-diol.
(b) Define and illustrate the terms: retention and inversion of configuration.
(c) Give difference between enantiomers and diastereomers. (1,1,2)

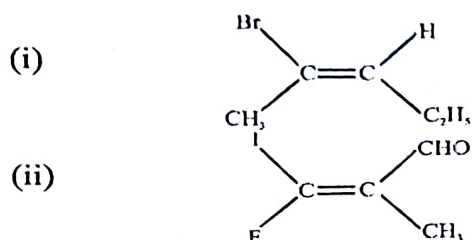
P.T.O.

(2)

6. (a) Explain with examples Configurational and conformational isomers.
 (b) By taking examples discuss that the presence or absence of chiral carbon atoms in a molecule is not the necessary and sufficient condition for the existence of optical activity. (2x2)

UNIT - IV

7. (a) Assign priorities and then assign E and Z configuration to the following:



- (b) Discuss the conformations of n-Butane and their relative stabilities. (2x2)
8. (a) Draw the two chair conformations of methyl cyclohexane. Also draw the Newman projection formulae. Which out of the two is more stable and why?
- (b) What are geometric isomers? How do we find out configuration of geometric isomers on the basis of:
 (i) Melting point
 (ii) Dipole moment (2x2)

UNIT - V

9. (a) Define localized chemical bond by taking an example.
 (b) What are elimination reactions? Give example.
 (c) Draw the structures of all isomeric ethers having formula $C_5H_{12}O$.
 (d) What is an asymmetric carbon atom? Give example.
 (e) Give the structures of the lowest molecular mass alkyl iodine which is chiral.
 (f) What are threo compounds? (6x1)

x-x-x