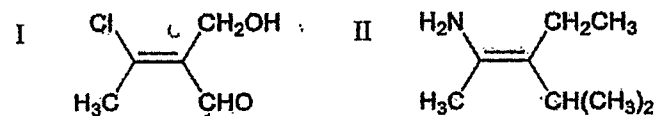
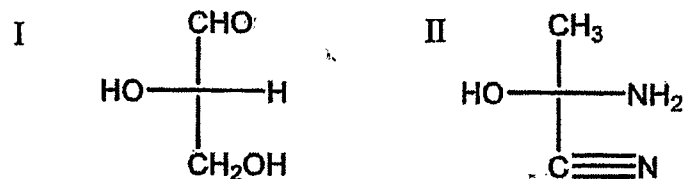


- (ii) Showing priorities of various groups, Assign E/Z Configuration to the following compounds :



- (c) (i) What do you mean by D/L Configuration ?
 (ii) Showing priorities of various groups, Assign the R/S configuration for the following :



5,5,5=15

6. Write short note on any **three** of the following :
 5,5,5=15

- Solvent effect on Nucleophilic Substitution Reaction
- Oxymercuration - Demercuration
- Free radical reaction of methane with halogen
- Cope elimination
- Halogenation of Benzene

[This question paper contains 4 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : 5310 I

Unique Paper Code : 2174001002

Name of the Paper : GE Basic Concepts of Organic Chemistry

Name of the Course : All Undergraduate Courses Except with Chemistry Discipline

Semester : II/IV/VI

Time : 2 Hours Maximum Marks : 60

Instructions for Candidates :

- Write your Roll No. on the top immediately on receipt of this question paper.
- Attempt any **four** questions in **all**.
- Each question carry **15** marks.

1. Attempt any **five** :

- Differentiate between enantiomers and diastereomers with suitable examples.
- Explain why meso compounds are optically inactive ? Give **one** example of such compound.
- Distinguish between inductive effect and electromeric effect (give at least three points of differences).

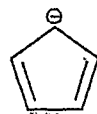
- (d) What is an ambident nucleophile? Give **two** examples.
- (e) Explain why nitrobenzene directs the incoming electrophile to meta position?
- (f) Alkenes undergo electrophilic addition reaction whereas benzene undergoes electrophilic substitution reaction. Give reason.

3, 3, 3, 3, 3 = 15

2. (a) Write down Huckel's rule. Which of the following compounds is/are aromatic? Justify your answer in each case.

Cyclopentadienyl
cation

Cyclopentadiene

Cyclopentadienyl
anion

- (b) What is the order of stability of CH_3^+ , C_2H_5^+ , $(\text{CH}_3)_2\text{CH}^+$, $(\text{CH}_3)_3\text{C}^+$. Give proper explanation.
- (c) What is the order of basicity of primary, secondary & tertiary alkylamines in gaseous phase? Why the order is different in aqueous phase?

5, 5, 5 = 15

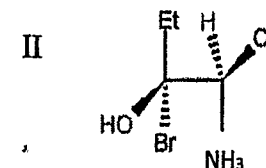
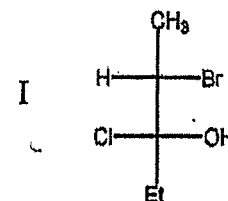
3. (a) What is Kharrasch anti - Markovnikov effect? Explain the stereochemical aspect of this effect. Name the Major product obtained when 1 - Butene is subjected to reaction with HBr in presence of benzoyl peroxide.

- (b) Why SN^2 reaction of alkyl halides are accompanied by inversion of configuration. Explain the mechanism.
- (c) Discuss the mechanism of Friedel craft acylation.

5, 5, 5 = 15

4. (a) A compound "Y" with molecular formula C_6H_{12} decolorizes bromine solution in CCl_4 , on catalytic hydrogenation yields 2 - methylpentane. Ozonolysis of Y yields acetaldehyde and 2 - methylpropanal. Write down the name and structure of "Y" Write down all the equations.

- (b) (i) Phenols are acidic in nature. Why?
- (ii) Convert the following representations into saw - horse representations:



- (c) Explain hyperconjugation. Rank the following alkenes in increasing order of stability: but - 1 - ene, 2,3 - dimeylbut -2-ene, 2-metholbut-2-ene, but -2-ene.
5. (a) Define specific rotation & give formula. Explain factors affecting the optical rotation of a substance.
- (b) (i) Define racemic mixture.

5, 5, 5 = 15