B.Sc.- I (CBCS Pattern) Sem-I

USCHT02 - Chemistry Paper-II : Organic Chemistry

P. Pages : 2 **GUG/W/22/11545**

Time : Three Hours * 2 2 1 0 * Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.
2. Write chemical reactions and draw diagram wherever necessary.

1. a) Define SP^3 hybridisation. Explain formation of ethane on basis of hybridisation. **5**

b) Explain the following terms- **5**
i) Inductive effect ii) Substitution reaction

OR

c) Explain nucleophiles and electrophiles with example. **2½**

d) Discuss homolytic fission of a covalent bond **2½**

e) Explain the effect electron with drawing group. **2½**

f) Discuss Addition reaction on acidity of carboxylic acid. **2½**

2. a) Discuss conformation of n-butane. **5**

b) Define isomerism Explain different types of isomerism with examples. **5**

OR

c) Explain geometrical isomerism with example. **2½**

d) Discuss Asymmetric synthesis **2½**

e) What is resolution? Discuss biochemical method for resolution of racemic mixture. **2½**

f) Discuss Newman representation for ethane molecule. **2½**

3. a) Explain the following. **5**
i) Kolhez reaction
ii) Freund's reaction

b) Discuss the following **5**
i) Oxymercuration of alkene
ii) Hydroboration of alkene

OR

c) Discuss classification of dienes **2½**

d) Explain ozonolysis of ethyne **2½**

e) State and explain Markownikoff's rule. **2½**

f) Explain chlorination of methane **2½**

4. a) Define electrophilic substitution reaction explain the general mechanism of electrophilic aromatic substitution reaction in benzene. **5**

b) Define orientation explain the directive influence of -OH in Phenol. **5**

OR

c) Discuss nitration of benzene. **2½**

d) Explain Huckel's rule of aromaticity **2½**

e) How will you prepare benzene from phenol? **2½**

f) Explain oxidation of Toluene in presence of alkaline potassium permangnate **2½**

5. Attempt **any ten.** **10**

a) Write bond angle in ethene and ethyne hybridisation.

b) Define electromeric effect

c) Define carbocatoin

d) Draw axial and equiterial bonds in cyclohexane

e) Define Diasteromerism

f) Explain racemic mixture

g) What is LPG?

h) Write Saytzeff's rule

i) How will you prepare acethylene from CaC_2.

j) Define activating and deactivating groups.

k) Write Friedel-Craft's reactions

l) Draw orbital diagram of benzene.

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