

B.Sc. (Part - I) CBCS Pattern Semester-I
USCHT02 - Chemistry Paper-II (Organic Chemistry)

P. Pages : 2

Time : Three Hours



GUG/W/23/11545

Max. Marks : 50

- Notes : 1. All **five** questions are compulsory and carry equal marks.
2. Give diagram and give chemical equations wherever necessary.

1. a) What is Hybridization? Explain the formation of Ethylene on the basis of sp^2 Hybridization. 5

b) Explain generation, stability & reactions of carbanion. 5

OR

c) Explain Nucleophiles and electrophiles with examples. 2½

d) Write note on Substitution reaction. 2½

e) What are Carbocation's? Give its formation. 2½

f) What is Inductive effect? Explain with well suitable examples. 2½

2. a) Explain conformational analysis of Cyclohexane with the help of Boat form and Chair form structures. 5

b) What is Geometric isomerism? Explain in details with the help of Fumaric acid. 5

OR

c) What is Resolution? Explain chemical method of resolution. 2½

d) Write note on Racemization. 2½

e) What are sequence rules? Explain with the help of any one example. 2½

f) What is Walden Inversion? Explain with well suitable examples. 2½

3. a) What are Dienes? Give its classification with suitable examples. 5

b) Explain Baeyer's strain theory of strainless ring. 5

OR

c) Explain – Freund's Reaction of synthesis of cycloalkane with suitable examples? 2½

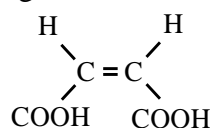
d) Write note on – Markovnikov's rule. 2½

e) How will you convert Calcium Carbide into Acetylene? 2½

f) Discuss free radical mechanism of halogenation of methane. 2½

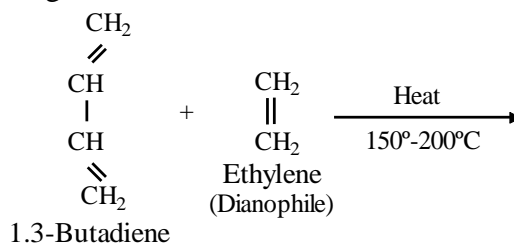
4. a) Explain the directive influence of ortho, para directing group in mono substituted benzene. 5
- b) What is Friedel-Craft Alkylation? Explain its reaction and mechanism in details. 5
- OR**
- c) Discuss Molecular Orbital Structure of Benzene. 2½
- d) Explain Huckel's rule of Aromaticity? 2½
- e) What are activating and deactivating group? 2½
- f) Explain Nitration of benzene with suitable example. 2½

5. Attempt **any ten** from following. 1*10
- What is bond length?
 - Define bond angles
 - Define Rearrangement reaction.
 - Define Isomerism
 - Give the functional isomer of 1-propanol ($\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$)
 - Draw Trans-formula of following Cis-Maleic acid.

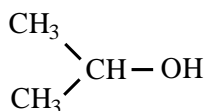


Maleic acid
(cis-isomer)

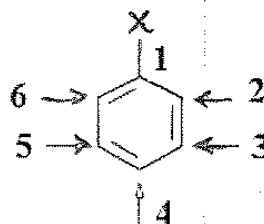
- vii) Complete the following reaction,



- viii) identify primary (1°) and Secondary (2°) Carbon atom in following compound.



- What is Peroxide effect?
- Mention Meta Position in following structure –



- Write any two strong deactivating functional group.
- Give preparation of benzene from acetylene.
