

M.Sc.- I (Chemistry) (NEP Pattern) Semester-I
NEP-12 / 01MSCCH02 - Paper-II : Organic Chemistry-I

P. Pages : 2

Time : Three Hours



GUG/W/23/15071

Max. Marks : 80

1. a) Discuss aromaticity in benzenoid and non-benzenoid compounds with suitable example. **8**
b) Explain phase transfer catalyst and discuss the role of crown ether as phase transfer catalyst. **8**

OR

- c) Write short note on Annulenes. **4**
d) Write the synthetic application of enamines. **4**
e) Draw and discuss about Inclusion compounds. **4**
f) Explain aromaticity of tropylium cation. **4**
2. a) Describe Cahn-Ingold-Prelog system of configuration with suitable example. **8**
b) Write the generation, structure, stability and reaction of carbene. **8**

OR

- c) Explain optical activity of biphenyl. **4**
d) Write a note on asymmetric synthesis. **4**
e) Write the generation and chemical reaction of carbocation. **4**
f) Discuss formation, and reactions of free radicals. **4**
3. a) Discuss effect of structure on reactivity with respect to resonance and steric effect. **8**
b) Explain neighbouring group participation of sigma bond with example. **8**

OR

- c) Explain Curtius-Hammetts principle with potential energy diagram. **4**
d) Write a note on carbocation rearrangement in neighbouring group participation. **4**
e) Explain Taft equation. **4**
f) Explain role of oxygen and Sulphur as neighbouring group in neighbouring group participation. **4**

4. a) Discuss the SN^1 reaction with suitable example and draw energy profile diagram. Explain effect of leaving group on SN^1 reaction. 8
- b) Discuss the following. 8
- i) Pechmann Reaction.
- ii) Smiles rearrangement.

OR

- c) Explain SN^2 Reaction. 4
- d) Explain Vilsmeier reaction. 4
- e) What is IPSO attack? Write the mechanism of following reaction. 4
- f) Discuss Sommelet-Hauser rearrangement reaction. 4
5. a) Define hyper conjugation with suitable example. 2
- b) Write a short note on Graphenes. 2
- c) What is mean by stereospecific reaction? Give an example. 2
- d) What are nitrenes? Explain singlet and triplet state. 2
- e) State Hammond postulate in short. 2
- f) What is mean by migratory aptitude. 2
- g) What is mean by ambient nucleophile? Give an example. 2
- h) Write a note on ortho-para ratio. 2
