

M.Sc.- I (Chemistry) (NEP Pattern) Semester-I
PSCCHT02 - Organic Chemistry Paper-I

P. Pages : 2

Time : Three Hours



GUG/W/24/15071(S)

Max. Marks : 80

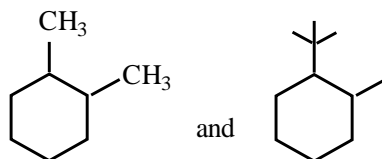
1. a) Discuss aromaticity in benzenoid and non-benzenoid compounds with suitable example. 8
- b) What are enamines? Give synthetic application of enamines? 8

OR

- c) Write a note on Crown-Ether. 4
- d) Explain role of imines in organic synthesis. 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) What are carbanions? Explain structure and reactivity of carbanions. 8

OR

- c) Draw and explain the stable conformation of following cyclic molecule. 4

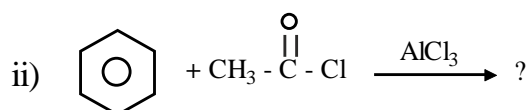
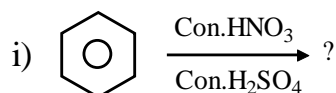


- d) Define & Explain. 4
- i) Meso compounds ii) Prochirality.
- e) Write the generation and chemical reaction of carbocation. 4
- f) Discuss formation and reactions of free radicals. 4
3. a) Discuss following methods of determining reaction mechanism. 8
- i) Isotopic Labelling ii) Kinetic Evidence.
- b) Explain neighbouring group participation of sigma bond with example. 8

OR

- c) State and explain Hammond Postulate. 4

- d) Discuss Hard and soft acids and bases. 4
- e) Explain classical & non-classical carbocations. 4
- f) Explain role of oxygen and Sulphur as neighbouring group in neighbouring group participation. 4
4. a) Discuss the S_N^1 reaction with suitable example and draw energy profile diagram. Explain effect of leaving group on S_N^1 reaction. 8
- b) Write mechanism and draw energy profile diagram of following reactions. 8



OR

- c) Explain S_N^2 Reaction. 4
- d) Explain smiles rearrangement reaction. 4
- e) Explain Benzyne mechanism. 4
- f) Discuss Gatterman-Koch reaction. 4
5. a) Define hyper conjugation with suitable example. 2
- b) Write a short note on graphenes. 2
- c) What is essential condition for the compound to be optically active. 2
- d) What are nitrenes? Explain singlet and triplet state. 2
- e) State Curtin-Hammett principle. 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
