M.Sc.- I (Chemistry) (NEW CBCS Pattern) Sem-I

PSCCHT02 - Organic Chemistry Paper-II

P. Pages : 2 **GUG/W/22/11184**

Time : Three Hours * 1 9 3 8 * Max. Marks : 80

Note : All questions are compulsory and carry equal marks.

1. a) Discuss the aromaticity in benzenoid & non-benzenoid compounds. **8**

b) What are imines? Give synthetic applications of imines. **8**

OR

c) Explain Huckel's rule with example. **4**

d) Discuss $R_4\overset{\oplus}{N}$ as phase Transfer catalyst with suitable example. **4**

e) What are crown ethers? Explain the structure of crown ether-18 **4**

f) Give brief account on tropolone. **4**

2. a) What are nitrches? How are they generated? Discuss their structures. stability and character **8**

b) Explain the stereochemistry of allene. **8**

OR

c) Discuss in brief classical and non-classical carbocations. **4**

d) Write short note on Cohn-Ingold Prelog system. **4**

e) Discuss conformation of decalin. **4**

f) Explain generation of singlet oxygen. **4**

3. a) Discuss the concept of neighbouring group participation with mechanism. **8**

b) Explain Hammet equation & relation of it with reaction constant. Give significance of reaction constant. **8**

OR

c) Describe migratory aptitute **4**

d) Explain hard and soft acid and bases with example. **4**

e) Discuss isotopic effect with example. **4**

f) Explain the intramolecular displacement by nitrogen. **4**

4. a) Discuss the kinetics and stereochemistry of SN^1 reaction. **8**

b) Explain the following with mechanism- **8**
i) Reimer-Tiemann Reaction
ii) Vilsmeir reaction

OR

c) Write note on Diazonium coupling reaction. **4**

d) Explain ambient nucleophiles. **4**

e) Explain Sommelet-Hauser rearrangement. **4**

f) Discuss in brief Gatterman-Koch reaction. **4**

5. a) What are carbene? Write it's structure. **2**

b) Explain the term enatiotopic and diastreotopic atom. **2**

c) Explain aromaticity of cyclopenta-dienyl anion. **2**

d) Define conjugation and cross conjugation. **2**

e) Write note on O/P ratio. **2**

f) Explain Hammond's postulate. **2**

g) What kinds of aromatic compound undergo nucleophilic substitution? **2**

h) Explain ipso attack. **2**

****