

Roll No.

Total Pages : 4

10308/NH

C-5/2110

ORGANIC CHEMISTRY-B

Semester-V

Syllabus-(Dec-18)

Time allowed : 3 Hours] [Maximum Marks : 26

Note: The candidates are required to attempt two questions each from Section A and B carrying 4 marks each and the entire Section C consisting of 5 short answer type questions carrying 2 marks each.

SECTION-A

1. (i) Explain the principle of NMR Spectroscopy.
(ii) What do you understand by equivalent and non equivalent protons? Illustrate with suitable example. (4)
2. (i) How will you distinguish the following pair of compounds on the basis of PMR spectroscopy?
(a) Propene and cyclopropene
(b) 1,1 dibromoethane and 1,2 dibromoethane

- (ii) What is chemical shift? What are the scales of measurement with TMS as reference standard? (4)

3. (i) Give account of following :
(a) Hypsochromic shift
(b) Chromophore
(c) Auxochrome
(d) Lambert's law
(ii) What is the effect of H-bonding on absorption frequencies of Alcohol and Amine? (4)

4. On the basis of Woodward fischer rule calculate λ_{max} for following compounds:
(i) Methyl vinylketone
(ii) 2-cyclopentane (4)

SECTION-B

5. (i) On the basis of IR Spectroscopy how acid, chloride, anhydride, esters, and amides can be distinguished from one another.

- (ii) How would IR Spectra of following pairs of compounds differ :
- (a) Acetone and Ethanol
- (b) Acetic Acid and Methanol (4)
6. Discuss 1, 2 and 1, 4 addition of Grignard's reagent to , unsaturated ketone. How does steric hindrance affect the course of these reactions? (4)
7. (i) Why does Sulphur prefer to form p -d bond.
- (ii) Give two methods for synthesis of thioethers from alkylhalide. (4)
8. How are 1°, 2°, 3° alcohol prepared from alkyl lithium? (4)

SECTION-C

9. (i) What is shielding and deshielding of protons?
- (ii) What factors affect chemical shift.
- (iii) Explain briefly types of electronic transitions.
- (iv) What is strecker reaction give its chemistry.

- (v) Write notes on :
- (a) Reformats by reaction
- (b) Simmon Smith reaction. (2×5=10)