

ORGANIC CHEMISTRY - I

(PAPER-II)

Time Allowed : 3Hrs.

Maximum Marks : 75

Note : The candidates are required to attempt one question each from Sections A, B, C and D carrying 15 marks each and the entire Section E consisting of 8 short answer type questions carrying (7×2)+1 marks each.

Section - A

- I. Write notes on :
(i) Aromaticity
(ii) H-bonding
(iii) Hyper conjugation. 5×3=15
- II. What are free radicals ? How are these formed ? Give their structure and account for their relative stability. 15

Section - B

- III. (a) Give the various methods of preparation of alkanes. 7
(b) Why the smaller rings are strained ? Explain with the help of banana bonds. 8
- IV. Explain the terms in detail :
(a) Racemisation (b) Inversion and Retention
(c) Distinguish Configuration and Conformation. .15

Section - C

- V. (a) Explain the conformational isomerism in cyclohexane. 7
(b) Give the detailed mechanism of nitration and sulphonation in benzene. 8
- VI. Write notes on :
(a) Hoffmann's Elimination (b) Hydroboration Oxidation
(c) Ozonolysis. 15

Section - D

- VII. (a) Give the examples of Diel's Alder Reaction. 6
(b) How are 1, 3-butadienes formed ? Give their methods of formation. Explain 1, 2- and 1, 4- addition reaction of 1, 3-butadienes. 9
- VIII. (a) Outline the SN^2 and SN^1 mechanism in detail. 9
(b) Why arylhalides are less reactive than alkylhalides ? 6

Section - E

- IX. Do all the parts in short :
- (i) Why allylhalides are reactive in nature ? 2
 - (ii) Why acetylen is acidic ? Give examples . 2
 - (iii) What are allenes ? Give examples 2
 - (iv) Give industrial uses of propene. 2
 - (v) What is epoxidation ? 2
 - (vi) Define Huckel Rule with example. 2
 - (vii) What is threo isomerism ? Give example. 2
 - (viii) Why 3° -Carbanion is unstable ? 1