

CHEMISTRY PAPER-II

(Organic Chemistry-A)

Time Allowed : Three Hours

Max. Marks : 22

Note: Attempt *five* questions in all, selecting *one* question from each Unit and one compulsory question. Compulsory question carries 6 marks and remaining questions carry 4 marks each.

Unit-I

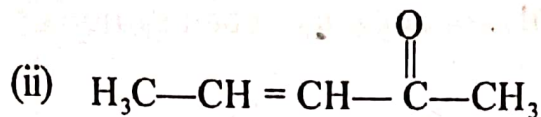
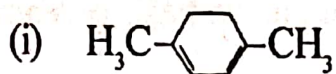
- What is Hybridisation ? Discuss sp hybridisation in organic molecules by taking suitable example.
 - What are carbonocations. Discuss their structure and classification.
- Write short notes on the following :
 - Inductive effect
 - Resonance
 - What are free radicals ? How does hyperconjugation explain the relative stability of primary, secondary and tertiary alkyl free radicals.

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Unit-II

3. (a) Write short notes on the following :
(i) Chromophore (ii) Oxochrome
Give suitable examples also.
- (b) Calculate λ_{\max} for the following molecules on the basis of Woodward Fieser rules :



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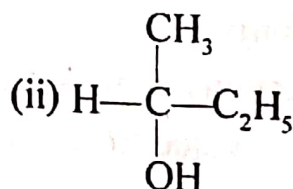
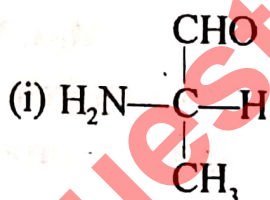
4. (a) Discuss hyperchromic and hypochromic shifts in UV spectrum. How can we achieve these shifts ?
- (b) Explain the effect of conjugation on UV spectrum of conjugated enes.

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Unit-III

5. (a) Draw structure of all the isomers having molecular formula C_6H_{14} and give their IUPAC names.
- (b) Write short notes on the following :
(i) enantiomers (ii) diastereomers
Give suitable example in each case.
6. (a) What do you understand by chiral and achiral molecules ? Give two examples of each.
- (b) Following sequence rules assign R or S to the following :

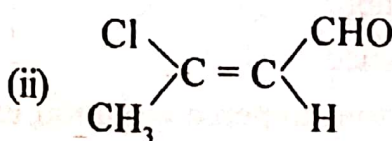
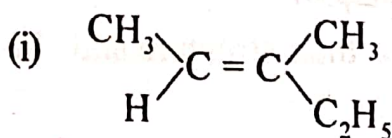
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Unit-IV

7. (a) Assign priorities and then assign E or Z configuration to the following molecules :



- (b) Draw conformation of cis and trans 1, 2- dimethyl cyclohexane.

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