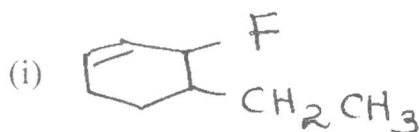


**N.B. :** (1) Question No. 1 is **compulsory**.

(2) Answer any **four** questions out of the remaining **six** questions.

(3) Give **figures** and examples wherever **necessary**.

1. (a) Give IUPAC nomenclature for the following organic compounds. 2

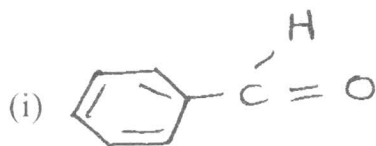


(b) Give suitable structures for the following :- 2

(i) 4 - (1-methyl ethyl) heptane

(ii) Neopentyl bromide.

(c) Draw resonating structures for the following :- 4



2. (a) Compare the acidity or basicity between following pairs of compounds and justify :- 3

(i) Phenol, 2, 4 - dinitrophenol

(ii) Aniline, Triethyl amine.

(b) Indicate whether the following compounds are nucleophiles or electrophiles :- 2



(c) Combustion of a 5.17 mg sample of a compound gives 10.32 mg of  $\text{CO}_2$  and 4.23 mg of  $\text{H}_2\text{O}$ . The mol-wt is 88. What is the empirical formula of the compound ? 3

3. Write short notes (any **four**) :- 8

(a) Hyperconjugation

(b) Role of solvent in  $\text{S}_\text{N}1$  reaction

(c) Dimerization of alkenes

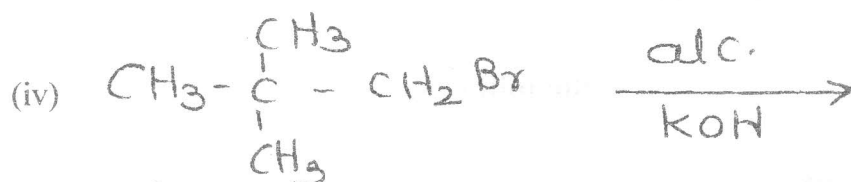
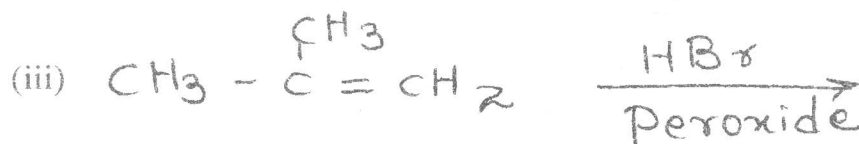
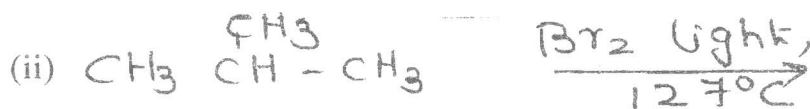
(d) Inductive effect

(e) Saytzeff Orientation.

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4. (a) Write the structures of the products formed and complete the following reactions :- 4



(b) Give one example each for the following reactions :- 4

- Halohydrin formation
- Dehydrohalogenation of alkyl halides
- Hydration of alkynes
- Oxymercuration - Demercuration.

5. (a) Discuss the mechanism and stereochemistry of  $\text{S}_\text{N}^2$  reaction with a suitable example. 4

(b) Discuss methods of preparation of alkyl halides from alkenes with examples. 4

6. (a) Explain the mechanism of Unimolecular elimination of alkyl halides and give suitable evidence for the same. 4

(b) Carry out the following conversion : 2  
Propanol to Allyl bromide.

(c) Give probable structure for an alkene yielding propionaldehyde and acetone on hydrolysis. 2

7. (a) On the basis of hybridisation, explain the formation of carbon-carbon single bond. 3

(b) Discuss the mechanism of addition of halogens to alkenes. 3

(c) Give the structures of A and B in the following reaction sequence. 1

