

Note : 1) All the questions are compulsory.

- 2) Figures to right indicate full marks.
- 3) Use of non-programmable calculator / log table is allowed.

Q. 1 Attempt of the questions : (Any Four)

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- 1) Explain Bohr's Theory.
- 2) Write down the classification of elements on the basis of their electronic configuration.
- 3) Explain ionic bonding.
- 4) Write down the general characteristics of ionic compound.
- 5) Write a note on metallic bond.
- 6) Write down Lewis electron dot structure of NF_3 and NO_2 .
- 7) Discuss molecular geometry and shape of the following molecule :
 - a) SF_6
 - b) BCl_3
- 8) Write down the effect of :
 - i) Size of ion
 - ii) charge of ion on polarizations of ion

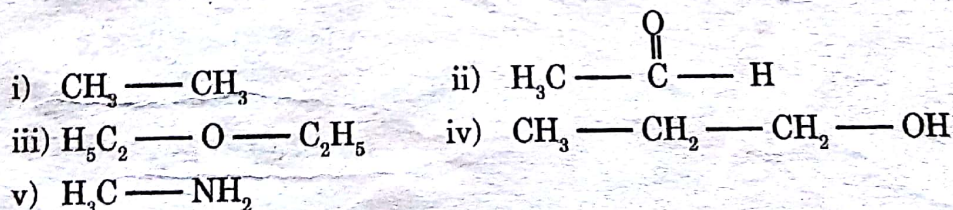
Q. 2 Attempt of the questions : (Any Four)

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- 1) Explain following terms :
 - i) Inductive effect
 - ii) Hyperconjugation
- 2) Explain sp^3 hybridization of carbon atom in detail.
- 3) Distinguish between hyperconjugation and resonance.
- 4) Explain sp^3 hybridization of oxygen in detail.
- 5) Distinguish between sigma bond and pi bond.
- 6) Explain the following terms :
 - i) Hyper conjugation
 - ii) Electromeric effect
- 7) Explain sp^3 hybridization of Nitrogen.
- 8) Distinguish between inductive effect and electromeric effect.

Q. 3 Attempt of the questions : (Any Four)

- 1) Define carbocation. Explain its shape and structure.
- 2) Give IUPAC nomenclature of following compound.



- 3) Give any two methods for the formation of free radical.
- 4) Differentiate between Homolytic fission and Heterolytic fission.
- 5) Differentiate between Carbocation and Carbanion.
- 6) Define Carbanion. Explain its Shape and Structure.
- 7) Explain Lowry Bronsted concept of acid and bases.

i) Ethanol

ii) Propane

iii) Chloromethane

iv) Ethanamine

v) 2-Butene

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a) BeCl_2

b) CH_4

3) Explain the sp^2 hybridization of oxygen.

4) Explain the sp^2 hybridization of carbon.

5) Differentiate between electrophile and nucleophile.

6) Give IUPAC Nomenclature of following compound.

i) $\text{CH}_3 - \text{CH}_2 - \text{Br}$

ii) $\text{H}_3\text{C}-\overset{\text{O}}{\parallel}\text{C}-\text{CH}_3$

iii) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3$

iv) $\text{H}_2\text{C} = \text{CH} - \text{CH}_2$

v) $\text{CH}_3 - \text{OH}$

— The End —