

22229

23124

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: 10
- a) Define Molecule and Compound
 - b) Define:
 - i) Empirical formula
 - ii) Molecular formula
 - c) Describe the optical isomerism.
 - d) Define the term: 'Asymmetric Carbon'.
 - e) Identify the following functional group and name the compounds.
 - i) CH_3COOH
 - ii) CH_3CHO
 - f) Define Stereochemistry.
 - g) Define a 'diene' and give one example.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- Explain the co-ordinate bond and covalent bond with suitable examples.
 - Distinguish between Aliphatic and Aromatic compounds with respect to their general characteristics.
 - Explain the halogenation of benzene with reactions.
 - Compare the behaviour of heating of benzene and polyethylene.
- 3. Attempt any THREE of the following:** **12**
- Distinguish between addition and condensation reactions with suitable examples.
 - Compare a behaviour on solubility of a low molecular weight and a polymer.
 - Explain Geometrical isomerism in alkanes.
 - Explain the formation of formula for functional groups with carbon.
- 4. Attempt any THREE of the following:** **12**
- Explain concept of electronegativity with suitable examples.
 - Distinguish between Aldehydes and Ketones.
 - Explain the Mechanism of sulfonation reaction of benzene.
 - Explain the formation of phenolic resin as used in 'moulding powder' with chemical reactions.
 - Explain process of purification of styrene monomer.
- 5. Attempt any TWO of the following:** **12**
- Define Bond length, Bond Polarity, Bond angle and dipole moment.
 - Explain the rules of IUPAC naming nomenclature of organic compounds.
 - State any six characteristics of aliphatic compounds.

6. Attempt any TWO of the following:**12**

- a) Give any three examples of each aromatic and aliphatic compounds with their formulas
 - b) Define functionality. Explain its effect on structure of polymer.
 - c) Identify functional group and state functionality of the following compounds. Name the compounds.
 - i) $\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$
 - ii) $\text{C}_6\text{H}_5 - \text{CHO}$
 - iii) $\text{C}_6\text{H}_5 - \text{OH}$
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