

# 22241

**23242**

**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) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) 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 organic compounds.
  - b) Classify organic compounds on the basis of their functional group.
  - c) State the general formula of Alkane, Alkene and Alkynes.
  - d) Draw the structure of:
    - i) 2-Methyl pentane
    - ii) 1-butene
  - e) List any four industrial uses of alcohol.
  - f) Define Aldehyde and State two physical properties of Aldehyde.
  - g) Draw the structural formula of 2-Methyl butanoic acid.

P.T.O.

2. Attempt any **THREE** of the following: 12
- Explain the general characteristics of organic compounds.
  - Explain Homolytic bond fission with suitable example.
  - Give any four physical properties of Alkenes.
  - Describe the method of ethanol preparation from ethylene.
3. Attempt any **THREE** of the following: 12
- Distinguish between  $SN^1$  and  $SN^2$  Mechanism with relevant example.
  - Explain Pyrolysis and Nitration with respect to ethane.
  - Define the following:
    - Alcohol
    - Absolute alcohol
    - Power alcohol
    - Methylated spirit
  - Describe the method of preparing Aldehyde from ethylalcohol and Acetylene.
4. Attempt any **THREE** of the following: 12
- Explain wurtz synthesis with chemical reaction.
  - Complete the following reaction. Identify the name of reactant and product.
    - $$CH_3 - \overset{\overset{O}{\parallel}}{C} - CH_3 + CH_3MgBr \rightarrow \underline{\quad ? \quad} \xrightarrow{H_2O, H^+} \underline{\quad ? \quad}$$
    - $$CH_3 - CHO + HCN \xrightarrow{OH^-} \text{-----}$$
  - Describe the procedure to choose a relevant carboxylic compound for a given textile wet processing.
  - Describe quick vinegar process.
  - Predict the products of the following reactions. When carboxylic acid reacts with
    - $PCL_5$
    - $SOCL_2$

- 5. Attempt any TWO of the following:** **12**
- a) Explain homologous series with example.
  - b) Describe following:
    - i) Elimination Reaction
    - ii) Addition Reaction
  - c) Predict the product of the following reaction. Identify name of reactant and product.
    - i) Dehydrogenation of Alkylhalide
    - ii) By thermal and catalytic cracking
- 6. Attempt any TWO of the following:** **12**
- a) Explain physical and chemical properties of Alkane.
  - b) How will you prepare ethanol.
    - i) Reduction of Acetaldehyde.
    - ii) Draw the structure of-
      - (1) Ethanol
      - (2) Ethylene glycol
  - c) Explain physical and chemical properties of Acetone.
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