



17312

15162

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are compulsory.*
 - (2) *Answer each next main question on a new page.*
 - (3) *Figures to the right indicate full marks.*
 - (4) *Assume suitable data, if necessary.*

Marks

1. Attempt any ten of the following :

20

- a) Define functional group. Give one example.
- b) Define secondary, tertiary carbon.
- c) Write two uses of alkanes.
- d) Draw structure of cyclopropane, cyclopentane.
- e) Write the structural formula of ethene and acetylene.
- f) Define aromatic compounds.
- g) Write the reduction reaction of benzene.
- h) Give the IUPAC names of
 - i) ethyl bromide.
 - ii) n-butyl chloride.
- i) Write any one method of preparation of alcohols.
- j) Define vapour pressure.
- k) Define ideal, non-ideal solutions.

2. Attempt any four of the following :

16

- a) Explain the term homologous series of organic compounds.
- b) State the IUPAC rules for nomenclature of branched chain hydrocarbons with suitable example.
- c) Explain the Sacht-Mohr theory of strainless rings.

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- d) How acetylene is prepared from
- Tetrahalides and from
 - Calcium carbide
- e) Write the oxidation reaction of phenol.
- f) Complete the following chemical reactions :
- $\text{CH}_3\text{COCl} + \text{C}_2\text{H}_5\text{OH} \rightarrow$
 - $\text{C}_2\text{H}_5\text{OH} + \text{PCl}_5 \rightarrow$

3. Attempt **any four** of the following :

16

- a) Identify the functional groups of the following compounds :
- CH_3CONH_2
 - $\text{CH}_3\text{CH}_2\text{OH}$
 - CH_3COOH
 - CH_3NH_2
- b) Give the type of hybridization and geometry of molecule in formation of ethane.
- c) How benzene is prepared from
- Phenol
 - Aromatic acid ?
- d) Explain Wurtz fitting reaction.
- e) Explain the isomerism in case of alcohols.
- f) Write any four examples of azeotropic mixtures.

4. Attempt **any four** of the following :

16

- a) Classify organic compounds on the basis of structure.
- b) Complete the following chemical reactions :
- $\text{CH}_2\text{CH}_2 + \text{HBr} \rightarrow$
 - $n \text{CH}_2\text{CH}_2 \xrightarrow[\text{Organic Precipitation}]{\text{HF/H}_2\text{SO}_4}$
- c) Write down the action of mixture of concentrated H_2SO_4 and concentrated HNO_3 on benzene.
- d) State any four industrial uses of alcohols.
- e) Write a short note on azeotropic mixture.
- f) Draw the vapour pressure graph of non-ideal solutions showing
- Positive deviation and
 - Negative deviation from ideal behaviour.



5. Attempt **any four** of the following :

16

- a) Write down the general formula of following compounds
 - i) Ketone
 - ii) Ethers
 - iii) Anhydride
 - iv) Organo metallic compounds.
- b) Write down any two methods of preparation of carbolic acid.
- c) Write the preparation methods of primary, secondary, tertiary alcohols from Grignard reagents.
- d) Explain Quinonoid theory of indication.
- e) State Raoult's law. Write the factors responsible for the deviation from this law.
- f) Write down the addition reaction of cyclopropane with
 - i) Hydrogen
 - ii) Oxygen

6. Attempt **any four** of the following :

16

- a) Write a short note on ozonolysis of alkenes.
 - b) Explain Reimer Tiemann reaction.
 - c) How halogenation of alkynes is carried out ?
 - d) Specify any four indication used in acid-base titrations. Write their colour in acidic solutions.
 - e) Why is the vapour pressure of a solution of glucose in water lower than that of water ?
 - f) Differentiate between aliphatic and aromatic compounds.
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