

17221

11920

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) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

20

- (a) State any four characteristics of organic compounds.
- (b) Differentiate between – Homolytic and Heterolytic fission.
- (c) State IUPAC rules of naming Alkenes.
- (d) State any four chemical properties of ethanol.
- (e) Write any four uses of acetaldehyde.
- (f) Explain preparation of oxalic acid by oxidation of glycols.
- (g) Give the classification of proteins.

2. Attempt any FOUR of the following :**16**

- (a) According to functional group, explain classification of organic compounds.
- (b) Define electrophiles and nucleophiles. Give two examples of each.
- (c) State Markownikoff's rule with an example.
- (d) Explain preparation of Alkynes by
 - (i) Dehydrohalogenation
 - (ii) Action of water on metallic carbide
- (e) Explain the uses of alkanes as fuel and as solvent.
- (f) (i) Define :
 - (1) Methylated spirit
 - (2) Denatured spirit
- (ii) Define power alcohol. State its uses.

3. Attempt any FOUR of the following :**16**

- (a) Explain with example, elimination reaction in organic compound.
- (b) Differentiate between S_N1 and S_N2 reaction.
- (c) How will you prepare alkenes by dehydrohalogenation of alkyl halides ?
- (d) How do an aldehyde react with
 - (i) Tollen's reagent
 - (ii) Fehling's solution
- (e) Explain Wurtz reaction with an example.
- (f) Give the reaction of alkane with
 - (i) Sulphuric acid
 - (ii) Haloacid

4. Attempt any FOUR of the following :**16**

- (a) Give the structural formula for
 - (i) 2-Ethyl-2-Butane
 - (ii) 2, 4-dimethyl hexane
 - (iii) Iso-butane
 - (iv) Neo-pentane
- (b) Explain halogenation of alkane.
- (c) Give preparation of ethanal from acetaldehyde.
- (d) State the preparation and any two properties and uses of glycol.
- (e) Write the reactions of glycerol with
 - (i) Phosphorous pentachloride
 - (ii) Sodium
- (f) Describe the method for preparing urea formaldehyde resin.

5. Attempt any FOUR of the following :**16**

- (a) State and explain carbocation and carboanion.
- (b) How formaldehyde and acetaldehyde is prepared from methyl alcohol ?
- (c) Give addition reaction of acetaldehyde with
 - (i) hydroxylamine
 - (ii) phenyl hydrazine
- (d) State two chemical properties and two uses of acetone.
- (e) Explain reaction of oxalic acid with
 - (i) Potassium hydroxide
 - (ii) Ethyl alcohol
- (f) Explain preparation of oxalic acid from sugar cane and sodium oxalate.

P.T.O.

6. Attempt any FOUR of the following :

16

- (a) Explain preparation of acetic acid from Grignard's reagent and Cyanides.
 - (b) What is the action of acetic acid on –
 - (i) NaOH
 - (ii) PCl_5
 - (c) Explain Zwitter ion formation of amino acids.
 - (d) Describe a method of separation of proteins.
 - (e) What are α -amino acids ? How are they classified ?
 - (f) Identify and name the following functional groups :
 - (i) – OH
 - (ii) – CHO
 - (iii) – NO_2
 - (iv) – COOH
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