17221

21718

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any TEN of the following : **20**

(a) Define homologous series.

(b) Distinguish between Aldehyde and Ketone.

(c) State chemical properties of glycerol.

(d) Define nucleophile and electrophile.

(e) What are alkanes ? State the general formula of alkane.

(f) State the uses of oxalic acid.

(g) State industrial importance of amino acids.

(h) Show preparation of oxalic acid by oxidation of glycols.

(i) Write two physical properties of ethanol.

(j) State the uses of alkanes.

(k) Why Chloroform is kept in dark coloured bottle ?

(l) Classify proteins depending on chemical composition with suitable examples.

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

(a) State two chemical properties and uses of acetone.

(b) How alkenes are prepared by dehydration of alcohols and by thermal cracking ?

(c) Explain preparation of ethanol from cracked petroleum.

(d) State characteristics of organic compound.

(e) Explain the following reactions : Action of oxalic acid.

(i) on KOH and

(ii) on ethyl alcohol

(f) Explain the reactions indicating action of acetic acid on

(i) NaOH

(ii) PCl_5 and identify the products

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

(a) Explain mechanism of S_N2 reaction drawing energy profile diagram.

(b) How organic compounds are classified ?

(c) State the two preparation of ethyl iodide.

(d) Write the properties of glycol.

(e) State and explain carbocation and carboanion.

(f) Explain following properties of alkanes and identify the products formed in each reaction :

(i) Pyrolysis (ii) Nitration

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

(a) Explain chemical properties of amino acids with chemical equation.

(b) Indicate the reactions of acetylene with

(i) halogen

(ii) haloacid and name the products

(c) Explain formation of urea formaldehyde from aldehyde.

(d) Write the reaction showing the action of

(i) Acetone with Grignard reagent

(ii) Acetaldehyde with hydrogen cynide

(e) State chemical properties and two uses of ethanol.

(f) Prepare oxalic acid from sugarcane and sodium oxalate.

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

(a) Distinguish between S_N1 and S_N2 reaction.

(b) State the reaction indicating preparation of monohalogen derivative and dihalogen derivative of alkanes.

(c) Explain the preparation of acetylene from metallic carbide. Write applications of acetylene.

(d) Show the action of Acetaldehyde on Fehling's reagent with the help of chemical equation.

(e) Explain the following properties of oxalic acid :

(i) Action of heat (ii) Acidic nature

(f) Write classification of amino acid with suitable example of each.

P.T.O.

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

(a) State the meaning of following terms :

(i) Methylated spirit

(ii) Power alcohol

(b) List various types of organic reaction and explain rearrangement reaction.

(c) Show preparation of acetic acid from

(i) Grignard Reagent

(ii) di-carboxylic acid

(d) Draw the structures of following organic compounds :

(i) Iso-butane

(ii) Neo-pentane

(iii) 3, 3, dimethyl hexane

(iv) 2, 3, dimethyl pentane

(e) Explain preparation of acetaldehyde from :

(i) Geminal dihalide

(ii) Ethyl alcohol

(f) Describe any method of separating proteins.
