17221

14115

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.*

MARKS

I. Attempt **any ten** of the following : **20**

a) Define homologues series with examples.

b) What are carbon compounds ? Give example.

c) What do you mean by breaking and formation of bonds in organic reaction ?

d) State the names of any four types of organic reactions.

e) What are alkanes ? Write the general reaction and structural formula for alkanes.

f) Write the structural formula and electronic formula of ethylene.

g) Distinguish between alkanes and alkenes.

h) State any two industrial uses of alkenes.

i) What is "power alcohol" ? State its 2 importance in industry.

j) Classify alcohols with suitable examples.

k) Write the structural formula for urea formaldehyde resin and isopropyl alcohol.

l) Define aldehydes and ketones with examples.

m) Write the names of the reagents required for preparing carboxylic acids.

n) Write the chemical reaction to prepare methanoic acid from Grignard reagent.

o) What are amino acids ? State its 2 importance.

P.T.O.

MARKS

II. Attempt **any four** of the following : **16**

a) State any four characteristics of carbon compounds.

b) Explain the meaning of carbocation and carbanion with one example of each.

c) Explain Wurtz synthesis with suitable chemical reaction.

d) Explain de-hydrohalogenation of alkyl halides with suitable chemical reaction.

e) Write any 2 physical properties and any two uses of ethanol.

f) Write any two laboratory methods of preparation of formaldehyde.

III. Attempt **any four** of the following : **16**

a) Classify organic compounds on the basis of their functional group.

b) Distinguish between electrophiles and nucleophiles.

c) Write the chemical reaction for addition of halo acids to alkenes. Illustrate with general formula of alkene and one e.g. of the same.

d) How would you prepare glycol ? State its 2 physical properties.

e) How would you prepare acetic acid by heating a dicarboxylic acid having two-COOH groups attached to same carbon atom ?

f) Explain nature and classification of amino acids.

MARKS

IV. Attempt **any four** of the following : **16**

a) Explain the mechanism of SN^2 reaction.

b) Explain nitration of alkane and state its 4 uses.

c) How would you prepare ethyne by the action of water on metallic carbide ? State any one chemical property of ethyne.

d) Explain preparation of ethanol from cracked petroleum.

e) Explain the following reaction of oxalic acid.

  a) reaction with KOH and

  b) reaction with ethyl alcohol.

f) Write any two chemical properties of amino acids.

V. Attempt **any four** of the following : **16**

a) State any four characteristics of organic compounds.

b) Explain rearrangement reaction with suitable chemical reaction.

c) State any four rules for IUPAC nomenclature for alkenes.

d) Write the reaction of acetaldehyde with

  i) Fehling's solution and

  ii) Tollen's reagent.

e) Explain preparation of oxalic acid by oxidation of glycols and explain its reaction with ethyl alcohol.

f) Explain formation of paraffin and acid chlorides with respect to acetic acid.

MARKS

VI. Attempt **any four** of the following : **16**

a) Explain pyrolysis and nitration with respect to ethane.

b) Write any one method of preparation and any two physical properties of glycerol.

c) Explain preparation of acetone from

i) isopropyl alcohol and

ii) acetylene

d) Explain the effect of heat and reaction with KOH on oxalic acid.

e) Define proteins and explain its classification with examples.

f) Describe the method of separating proteins.