17312

21415

3 Hours/100 Marks

Seat No. | | | | | | | | |

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****.*

MARKS

1. Attempt **any ten** of the following : **(2×10=20)**
   a) Define isomerism.
   b) Write down first four elements of homologous series.
   c) Write physical properties of alkanes.
   d) What is meant by nitration ?
   e) Write uses of aromatic compound.
   f) Write uses of phenols.
   g) What is Grignord Reagent ?
   h) Give general formula for alkene and cycloalkane.
   i) State Raoult's law.
   j) Define azeotrope.
   k) Define polymerization.
   l) Give the structure of ethyl methyl ether and formic acid.

2. Attempt **any four** of the following : **(4×4=16)**
   a) How organic compounds are classified ? State example of each.
   b) Explain Wurtz's reaction to prepare alkane.
   c) Define pyrolysis. Explain it with reaction.
   d) Explain Quinonoid theory for indicator.
   e) Draw x-y and T-x-y diagrams for minimum and maximum boiling azeotrope.
   f) Write IUPAC rules for Alkanes.

MARKS

3. Attempt **any four** of the following : **(4×4=16)**

   a) Explain ideal and non-ideal solutions in detail.

   b) Write down the reactions to prepare alkene from :

      i) Dehydration of alcohols

      ii) Dehydration of R-X.

   c) Explain modification of Baeyer's strain theory.

   d) Explain Ostwald's theory for Indicator.

   e) Write down the common name of following compounds :

      i) $H - CHO$

      ii) $CH_3 - \underset{\displaystyle OH}{\underset{|}{CH}} - CH_3$

      iii) $CH_3CH_2 - Br$

      iv) $CH_3 - \underset{\displaystyle O}{\underset{||}{C}} - CH_3$

   f) Draw the structural formula for :

      i) 2, 4, 6–Tribronophenol

      ii) Trinitrotoluene.

4. Attempt **any four** of the following : **(4×4=16)**

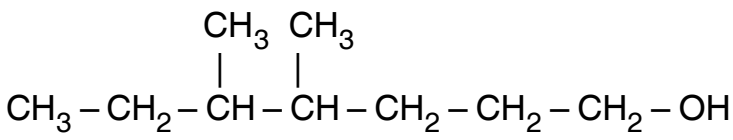
   a) Draw p-x diagram for an ideal mixture of two liquids. Explain in brief.

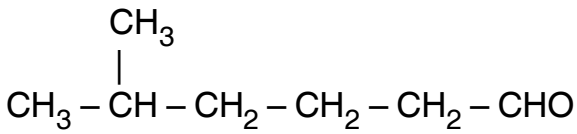
   b) What do you mean by Monohydric, Dihydric, Trihydric, Polyhydric Alcohol ? Write one example of each.

   c) $CH_4 + Cl_2 \rightarrow A + HCl$
   $A + Cl_2 \rightarrow B + HCl$
   $B + Cl_2 \rightarrow C + HCl$
   $C + Cl_2 \rightarrow D + HCl$
   What is A, B, C, D ?

MARKS

d) Write IUPAC name of following compounds :

i)


ii)


e) Write down the reaction to prepare alcohol from :

i) aldehyde ii) ketone.

f) Write down chemical reaction of Benzene with :

i) Oxygen ii) HNO_3.

5. Attempt **any four** of the following : **(4×4=16)**

a) Write down the class of compounds from following function groups :

i) $-NH_2$ ii) $-NO_2$

iii) $-X$ iv) $-C \equiv N$

b) Write down the reactions of Alcohol with :

i) PCl_5 ii) PCl_3.

c) Write down the physical properties and uses of alcohol.

d) Write down reaction to prepare Toluene from :

i) Benzene ii) Phenyl bromide.

e) Explain Friedal-Craft's reaction of Aromatic compound.

f) Write down the reaction to prepare Alkyne by Dehydrohalogenation of Vicinal Dihalides.

6. Attempt **any four** of the following : **(4×4=16)**

a) Compare Aliphatic and Aromatic compounds.

b) Explain Sulphonation of Benzene with reaction.

c) Define Ozonolysis. Explain it with Alkynes.

MARKS

d) Write down the reactions of Benzene.
   i) To prepare Cyclohexane.
   ii) To prepare Benzene Hexa Chloride (BHC).

e) Write two methods of preparations of monohydric phenol.

f) How aromatic hydroxy compounds classified ? State example of each.
