17312

16172

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.

(6) Preferably, write the answers in sequential order.

Marks

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

a) What is meant by saturated and unsaturated hydrocarbon? Give one example of each.

b) State any two types of solutions with examples.

c) Write uses of alkynes.

d) Give two reasons for the separate classification of aromatic compounds.

e) State the classification of alcohols.

f) Identify the functional group in the following compounds,

(i) $H_3C - CH_2 - \overset{\overset{O}{\|}}{C} - NH_2$

(ii) $H_3C - CH_2 - \overset{\overset{O}{\|}}{C} - OC_2H_5$

Marks

g) What is cyclo alkanes? Give one example.

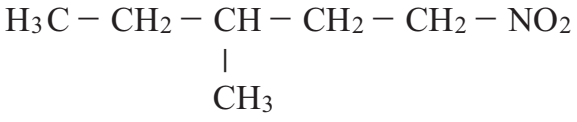
h) Differentiate between alcohols and phenols.

i) Give two uses of alkanes and alkenes.

j) State Raoults law for a solution of non-volatile solution.

k) Give the general formulae of alkane and alkene.

l) Give IUPAC name of the following,



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

a) Give IUPAC name of the following,

(i)

(ii)

b) Give the chemical reaction on alkane for the following

(i) Chlorination

(ii) Nitration

c) Explain the structure of benzene.

d) Explain the method of preparation of alcohols by using Grignard's reagent and from alkyl halides.

e) Explain ostwald's ionisation theory with proper example.

f) Distinguish between monohydric and dihydric phenol. Write two uses of phenol.

Marks

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

a) Explain chemical properties of benzene for Nitration and sulphonation.

b) Explain Baeyer's strain theory.

c) Give any four rules of IUPAC nomenclature of branched chain hydrocarbon with suitable examples.

d) Draw the p-*x* diagram for an ideal mixture of two liquids.

e) Write the method of preparation of alcohols from ketones and reduction.

f) Give the following reactions of benzene with examples,

(i) Grignard's reaction

(ii) Friedel-craft's reaction

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

a) State two uses of each of aromatic compounds and phenols.

b) How organic compounds are classified? Give one example of each.

c) Write the physical and chemical properties of alcohols.

d) What is the action of hydrogen halide and phosphorus halides on alcohols.

e) Explain polymerization reaction of alkene with example.

f) Why is the vapour pressure of a solvent lowered by the addition of a non-volatile solute?

Marks

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

a) Explain minimum boiling azeotropes and maximum boiling azeotropes with diagram.

b) Write any two chemical properties of phenol.

c) How will you prepare acetylene from vicinal geminal dihalides and write its uses.

d) Give two preparation methods of monohydric phenol.

e) Give any two preparation methods of alkane.

f) Explain the structure of methane.

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

a) Give any two methods of preparation of benzene and its homologus.

b) What is pyrolysis? Explain with example.

c) Write a note on Quinonoid theory.

d) Explain Homologus series.

e) Give the following reaction of alcohol with one example

(i) reaction with hydrogen halide

(ii) reaction with sodium or potassium.

f) Write any two ring opening reactions of cycloalkanes.