**14115**

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) Use of Non-programmable Electronic Pocket Calculator is **permissible**.

MARKS

1. Answer **any ten**.                                            **(10×2=20)**

   a) What do you mean by homogeneous reaction ? Give one example.

   b) List four types of chemical bonds.

   c) Write any two points of importance of organic chemistry.

   d) Poly ethylene has 200 repeat units. Write its empirical formula and molecular weight  (A.W. : H = 1, C = 12).

   e) Name any four aromatic compounds.

   f) Write boiling point of pure benzene. Comment on its toxicity.

   g) Write the chemical formula of acetic acid and ethylene glycol.

   h) Define polymer ? Write name of any two polymers which contains hydroxy as a functional group.

   i) Define an intermediate with respect to organic reaction. Give an example.

**P.T.O.**

j) Arrange halogen elements in the order of their increasing reactivity.

k) Define 'Isomerism'. List two type of isomerism.

l) What do you mean by asymmetric carbon atom ? Give an example.

2. Answer **any four** of the following. **16**

a) Differentiate between ionic bond and co-valent bond. Give an example of the corresponding compound.

b) Classify organic compounds on the basis of functional groups.

c) Explain how cyclohexane is prepared by reaction of benzene.

d) Give the structural formula of mono, di, tri and tetra alkyl halide.

e) What is a substitution reaction ? Explain it with suitable example.

f) Explain oxidation reaction with suitable example.

3. Attempt **any four**. **(4×4=16)**

a) An organic substance on analysis was found to contain 10.06% carbon, 0.84% hydrogen and 89.10% chlorine. Calculate the empirical formula for this substance (A.W. : H = 1, C = 12, Cl = 35.5, 'O' = 16).

b) Give four points of comparison between aromatic and aliphatic compounds.

c) Explain with reaction, chlorination of benzene.

d) Give any four structural formula a alkyl ether.

e) Differentiate : addition reaction and condensation reaction.

f) Explain position isomerism with examples.

**M**ARKS

4. Answer **any four**. (4×4=16)

   a) Define :  i) an 'atom',  ii) an 'element',  iii) a 'molecule',  iv) a 'compound'.

   b) Classify, giving examples of organic compounds based on structure.

   c) Explain giving example, Friedel Craft's alkylation.

   d) Give the structural formula of any four alkyl amines.

   e) Describe sulphonation reaction with suitable example.

   f) Differentiate between structural isomerism and stereo isomerism.

5. Answer **any four**. (4×4=16)

   a) Percentage composition of an organic substance as determined by analysis was C = 14.5, H = 1.8, O = 19.24 and Cl = 64.46. Calculate the empirical formula.

   b) List any four general characteristics of organic compounds.

   c) Give any four characteristics of aromatic compounds.

   d) Represent an amide group. Give the structural formula of any three alkyl amides.

   e) Explain condensation reaction with a suitable example.

   f) Describe geometric isomerism with examples.

6. Answer **any four**.                                                                  **(4×4=16)**

   a) Explain with examples the co-ordination bond.

   b) Differentiate between empirical and molecular formula.

   c) Explain nitration reaction of benzene.

   d) Give any four structural formula of alkyl esters.

   e) Distinguish : nucleophylic reaction and electrophylic reaction.

   f) What is nuclear isomerism ? Explain it with an example.

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