22229

22223

3 Hours / 70 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.

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

Marks

1. Attempt any FIVE of the following: **10**

a) Define Bond Length and Bond energy.

b) Write any two general characteristics of organic compound.

c) Draw structural formula for aldehyde and ester.

d) Define Dipole moment

e) Give any two points of difference between monomer and polymer

f) Define isomerism.

g) Give brief explanation about asymmetric carbon atom.

Marks

2. Attempt any THREE of the following: **12**

a) Explain Ionic bond with suitable example.

b) Explain Friedel craft alkylation with suitable example.

c) Give any two examples each of hydrogenation and oxidation reaction.

d) Explain any four rules of IUPAC nomenclature of organic compounds.

3. Attempt any THREE of the following: **12**

a) Explain the formation of a co-ordinate bond with suitable example.

b) Explain addition reaction with suitable example.

c) Explain geometrical isomerism in alkanes.

d) Explain the effect of functionality on structure of a compound with suitable example.

4. Attempt any THREE of the following: **12**

a) Explain the graph of bond energy as function of distance between atoms.

b) Distinguish between aliphatic and aromatic compounds with respect to their general characteristics.

c) Give one example each of the following compounds in general formula.

i) Amine

ii) Ketone

iii) Esters

iv) Amide

d) Distinguish between aldehydes and ketones.

e) Compare geometrical and optical isomerism with suitable example.

Marks

5. Attempt any TWO of the following: **12**

a) i) Give classification of organic compounds on the basis of structure and functional group.

ii) Define Empirical formula

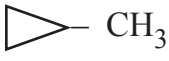
b) i) Give one example of condensation reaction

ii) Distinguish between Sulphonation and Nitration with suitable example

c) Explain the structure and functionality of polypropylene.

6. Attempt any TWO of the following: **12**

a) Write IUPAC names of the following

i) 

ii) $CH_3 - CH_2 - \underset{\underset{OH}{|}}{CH} - CH_3$

iii) $Br - CH_2 - CH = CH_2$

iv) $CH_3 - CH_2 - \underset{\underset{O}{||}}{C} - CH_2 - CH_3$

v) $CH_3 - CH_2 - \underset{\underset{NO_2}{|}}{CH} - CH_3$

vi) $CH_3 - CH_2 - CH_2 - \underset{\underset{O}{||}}{C} - OH$

b) Explain behaviour of solubility of sodium chloride and polyvinyl chloride.

c) i) Define Monomer

ii) Describe the process of purifying any one monomer