Q.24 Define reactivity ratio.
Q.25 Explain Ebulliometry technique for molecular weight determination of polymers.
Q.26 Explain macro molecular concept in polymers.
Q.27 Write short note on light scattering technique of molecular weight determination.
Q.28 Discuss time independent behavior of polymers.
Q.29 Explain Suspension polymerisation technique.
Q.30 Explain end group analysis of polymers.
Q.31 Discuss general rules for polymer solubility.
Q.32 Discuss importance of reactivity ratio.
Q.33 Discuss Maxwell voigt model of visco-elastic materials
Q.34 Discuss concept of geometrical isomerism.
Q.35 Discuss Power law of fluids.

**SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain Glass transition temperature, its importance and various factors influencing it.
Q.37 Discuss:
a) Ionic polymerisation
b) Secondary bonding in polymers
Q.38 Differentiate between crystalline and amorphous behavior of polymers.



No. of Printed Pages : 4
Roll No. .....



**Branch : Plastic Engineering**
**Subject:- Plastic Science and Technology**

Time : 3Hrs. M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 The polymerization of two or more chemically similar monomers forming a long molecular chain is termed as_____
a) Addition polymerization
b) Copolymerisation
c) Condensation polymerization
d) Step-growth polymerization
Q.2 On the basis of mode of formation polymers can be classified:
a) As addition polymer only
b) As condensation polymers only
c) As copolymers
d) As addition and condensation polymers
Q.3 DP denotes_____
a) Depth of polymer
b) Degree of polymerisation
c) Di-functional groups in polymer
d) None of the above

Q.4 Which of the following is a thermosetting polymer?
a) Polystyrene b) Poly-olefins
c) Nylons d) Phenolic resins

Q.5 Tg stands for_____
a) Melting temperature
b) Glass transition temperature
c) Processing temperature
d) None of the above

Q.6 The process of heat softening, moulding and cooling to rigidness can be repeated for which plastics?
a) Thermoplastics
b) Thermosetting plastics
c) Both (a) & (b)
d) Neither (a) nor (b)

Q.7 Low density polythene as compared to high density polythene is_____
a) Harder b) Tougher
c) Chemically inert d) More flexible

Q.8 Weight average molecular weight of a polymer can be determined by_____
a) Osmometry b) Viscometry
c) Light scattering d) None of the above

Q.9 Tacticity in polymers is due to the presence of_____
a) Double bond b) Hetrochain
c) Asymmetric carbon d) All of them

Q.10 Polymers are_____in nature.
a) Organic b) Inorganic
c) both a & b d) None of these



## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 _____is an example of addition polymerisation

Q.12 _____polymers cannot be recycled.

Q.13 Name two commodity polymers.

Q.14 The substance that reduces the rate and degree of polymerization, without halting propagation process, is called a_____

Q.15 Amorphous polymers generally show_____range order.

Q.16 Strong covalent bond exist between the chains of_____polymers.

Q.17 The process in which the molecular weight of polymer almost remains unchanged with the progress of reaction is a_____

Q.18 Chain initiation step of free radical polymerization consists of decomposition of initiator and addition of free radical to monomer. (T/F)

Q.19 Dp stands for_____

Q.20 _____is unique property of polymers

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Discuss classification of Polymers based on their structures.

Q.22 Explain bulk of polymerisation technique.

Q.23 Give mechanism of addition polymerisation.