Q.28 Give advantages of Solution Polymerisation.

Q.29 Discuss Step growth polymerisation.

Q.30 Explain Stereo-isomerism of polymers.

Q.31 Give difference between crystalline and amorphous polymers

Q.32 Explain the concept of zero shear viscosity

Q.33 Discuss secondary bonding in polymers.

Q.34 Write short note on light scattering technique of molecular weight determination.

Q.35 Explain Maxwell - voigt model of visco-elastic materials.

SECTION-D

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

Q.36 Explain :

a) Molecular weight determination of polymers by Gel permeation chromatography.

b) Advantages and disadvantages of Emulsion polymerisation technique.

Q.37 Write short note on:

a) Brief history of polymers

b) Thermodynamics of polymer solution

Q.38 Explain Glass transition temperature, its importance and anyone technique for its determination.

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SECTION-A

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

Q.1 Which type of forces exist in polymers?

a) Vander-wall forces b) Secondary forces
c) H-bonding d) All of the above

Q.2 A cross linked polymer is _____

a) Always Flexible
b) Always rigid
c) May be Flexible or rigid
d) None of the above

Q.3 The polymerization of two or more chemically different monomers forming a long molecular chain is termed as_____.

a) Addition polymerization
b) Condensation polymerization
c) Copolymerization
d) chain growth polymerization

Q.4 Emulsion polymerization is a type of polymerization that occurs in emulsion droplets called _____.

a) Emulsified droplets b) Micelles
c) Emulsifying droplets d) None of these

Q.5 Condensation polymers will release by-products like_____.

a) HCI b) Carbon-di-oxide

c) Ammonia d) Ozone

Q.6 Tg stands for_____.

a) Melting temperature

b) Glass transition temperature

c) Processing temperature

d) None of these

Q.7 Glass transition temperature of polymer is determined by_____.

a) Infrared spectroscopy

b) Differentiate scanning calorimeter

c) Mass spectrometry

d) Scanning electron microscopy

Q.8 Which of the following is a natural polymer.

a) Bakellite b) Polyethene

c) silk d) polystyrene

Q.9 The process of heat softening, moulding and cooling to rigidness can be repeated for which plastics?

a) thermoplastic b) thermosetting plastics

c) both(a) and (b) d) neither (a) nor (b)

Q.10 Which of the following does not undergo addition polymerisation?

a) vinyl chloride b) butadiene

c) Styrene d) All of the above

SECTION-B

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

Q.11 Macromolecules are_____ molecular weight compounds

Q.12 Secondary bonds are_____ then primary bonds.

Q.13 Name two mechanism of polymer reaction.

Q.14 Name two types of geometrical isomerism.

Q.15 Give two examples of Homo-polymers.

Q.16 Isomers with similar groups on the same side are called as_____ isomers.

Q.17 _____ is an example of inhibitor.

Q.18 GPC stands for_____.

Q.19 _____ instrument is used in calorimetric method.

Q.20 Macromolecules does not show any _____ point.

SECTION-C

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

Q.21 Discuss classification of polymer based on their processing and applications.

Q.22 Explain Bulk polymerisation technique.

Q.23 Explain macromolecular concept of polymers.

Q.24 Explain Poly Dispersity Index.

Q.25 Explain factors affecting Glass transition of polymers.

Q.26 Explain concept of Polymer solutions.

Q.27 Discuss importance of Co-polymers