Q.26 Explain solvents selection for polymers.

Q.27 Discuss membrane osmometry technique.

Q.28 Write Carother's equation and its importance.

Q.29 Define reactivity ratio? Explain its effect on structure of polymers.

Q.30 Explain thermodynamics of polymer solution.

Q.31 Explain centrifugation technique.

Q.32 Discuss any one technique of Tg determination.

Q.33 Explain different types of copolymers.

Q.34 Explain concept of functionality.

Q.35 Discuss mechanism for free radical polymerization.

SECTION-D

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

Q.36 Write short note on:

a) Different types of initiators

b) chain transfer agents

Q.37 Explain:

a) Importance of copolymerization

b) Gel permeation chromatography.

Q.38 Give difference between amorphous and crystalline polymers.

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4th Sem / Plastic Engineering

Subject:- Polymer Science and Technology - II

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Thermoplastics become _____upon heating.

a) becomes soft

b) May be or may not become soft

c) becomes hard

d) None of the above

Q.2 Which of the following is an example of amorphous polymer?

a) SBR b) UF

c) PS d) LLDPE

Q.3 Emulsion polymerization is a type of polymerization that occurs in emulsion droplets called_____.

a) Emulsified droplets b) Micelle

c) Emulsifying droplets d) Emulsifier droplets

Q.4 Weight average molecular weight _____on the weight of molecules in a polymer.

a) Dependent b) Non dependent

c) Partially dependent d) None of them

Q.5 Tg stands for _____.

a) Melting temperature
b) Glass transition temperature
c) Processing temperature
d) None of the above

Q.6 Which of the following does not undergo addition polymerisation?

a) vinyl chloride b) butadiene
c) styrene d) All of the above

Q.7 Which is an example of organic polymer?

a) Cellulose b) Nylon
c) Silicone d) None of them

Q.8 Which of the following factor are responsible for reactivity ratio of monomers?

a) Initiation
b) Reaction medium
c) Substituted group or monomer double bond
d) All of the mentioned

Q.9 Glass transition temperature of polymer is determined by _____.

a) Infrared spectroscopy
b) Differential scanning calorimeter
c) Mass spectrometry
d) Scanning electron microscopy

Q.10 Weight average molecular weight of a polymer can be determined by _____

a) Osmometry b) Viscometry
c) Light scattering d) All of the above

SECTION-B

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

Q.11 Define weight average molecular weight of polymers.

Q.12 Name any one parameter for solvent selection.

Q.13 Crystalline polymers show long range order(T/F).

Q.14 Write formula for degree of polymerisation.

Q.15 Give two solvents for PVC.

Q.16 Name any one technique for determination of Glass transition temperature.

Q.17 Give two advantages of copolymers.

Q.18 Give any one function of chain transfer agent.

Q.19 What is the role of initiator in polymerisation?

Q.20 Name two natural polymers.

SECTION-C

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

Q.21 Explain molecular weight distribution of polymers and their importance.

Q.22 Discuss various types of inhibitors.

Q.23 Explain ceiling temperature.

Q.24 Discuss factor influencing Glass transition temperature.

Q.25 Explain relation between conversion and degree of polymerisation.