Q.30 Explain geometrical isomerism of polymers.

Q.31 Give mechanism for ring opening polymerisation.

Q.32 Explain the concept of zero shear viscosity

Q.33 Discuss Poly-dispersity?

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

Q.35 Explain Power Law of fluids.

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) Maxwell-Voigt model of visco-elastic material.

b) Thermodynamics of polymer solution.

Q.38 Discuss:

a) Classification of Polymers

b) Crystalline and amorphous behavior of polymers

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3rd Sem / Plastic Tech.
Subject:- Polymer Science and Technology / Poly. Sc. & Tech. I

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 What is the name of the compound?

$HOCH_2CH_2OH$

a) Ethylene glycol b) Diphenyl propane
c) Hexaneamide d) Nylon6,6

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) Copolymerization
c) Condensation polymerization
d) chain growth polymerization

Q.4 The functional group are arranged on the same side of the carbon back bone are said to be _____.

a) Syndiotactic polymers
b) Atactic polymers
c) Isotactic polymers
d) Chain polymers

Q.5 A straight chain polymer comes under the_____ type of the polymers.
a) Homo polymers
b) Co-polymers
c) Regular chain copolymers
d) Irregular straight chain copolymers

Q.6 The nylon is prepared first in
a) 1921 b) 1931
c) 1941 d) 1951

Q.7 Plastics are generally made from
a) coal b) plant products
c) kerosene d) petroleum

Q.8 The oldest synthetic plastic is:
a) Polyester b) Bakelite
c) Melamina d) Polythene

Q.9 Which of the following do not undergo the chain polymerisation?
a) Polyester b) Vinyl
c) Allyl d) Dienes

Q.10 Glass transition temperature of polymer is determined by_____
a) Infrared spectroscopy
b) Differential scanning calorimeter
c) Mass spectrometry
d) Scanning electron microscopy

SECTION-B

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

Q.11 State two factors affecting Tg of polymers.
Q.12 Secondary bonds are_____then primary bonds.
Q.13 Name two mechanism of polymer reaction.
Q.14 Name two physical states of polymers.
Q.15 Give two examples of Homo-polymers.
Q.16 Give relation between Tm and Tg.
Q.17 _____is an example of inhibitor.
Q.18 PDI stands for_____.
Q.19 Give two examples of Co-polymers.
Q.20 Macromolecules does note show any_____point.

SECTION-C

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

Q.21 Discuss time independent behavior of polymers.
Q.22 Explain solution polymerisation technique.
Q.23 Explain macromolecular concept of polymers.
Q.24 Define reactivity ratio.
Q.25 Explain factors affecting Tg of polymers.
Q.26 Give brief History of Polymers.
Q.27 Discuss importance of Co-polymers.
Q.28 Give advantages of Solution Polymerisations.
Q.29 Discuss Step growth polymerisation.