Q.28 Give brief history of polymers.

Q.29 What do you understand by molecular weight distribution in polymers.

Q.30 Discuss the importance of copolymers.

Q.31 Explain the process of bulk polymerization.

Q.32 Explain glass transition temperature (Tg.) and write relation between Tg. and Tm.

Q.33 State and explain the power law of fluids.

Q.34 Explain the effects of molecular weight of a polymer on its solubility.

Q.35 Discuss reaction mechanism of ring opening polymerization.

SECTION-D

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

Q.36 Discuss the technique of emulsion polymerization in details.

Q.37 Discuss how to calculate molecular weight of polymers by gel permeation chromatography in details.

Q.38 Write short note on

a) Solubility parameter

b) Maxwell model of viscoelastic

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

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Which is an example of copolymer

a) ABS b) LDPE

c) PP d) HDPE

Q.2 In which polymerization reaction produces biproduct

a) Addition Polymerization

b) Condensation polymerization

c) Both A & B

d) None of these

Q.3 Monomer of nylon-6 is

a) Caprolectum

b) Hexamethylene diamine

c) Adipic acid

d) Both B & C

Q.4 Degree of polymerization

a) Number of repeating unit

b) No. of functional group

c) Both A & B

d) None of these

Q.5 In which method to calculate polymer molecular weight

a) Weight average molecular weight
b) Number average molecular weight
c) Viscosity method
d) All of these

Q.6 Rheology means

a) Flow and deformation
b) Only flow
c) Only deformation
d) Viscosity

Q.7 Thicksotropic fluid is/are_____ property.

a) Time dependent b) Time independent
c) Both A& B d) None of these

Q.8 Example of natural polymer.

a) Leather b) Cotton
c) Starch d) All of these

Q.9 Nylon is a

a) Thermoplastic b) Thermoset
c) Both A & B d) All of these

Q.10 Polymer is

a) Giant molecules b) Micro molecules
c) Both A & B d) None of these

SECTION-B

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

Q.11 Give two examples of natural polymers.
Q.12 Define thermoplastic material with two examples.
Q.13 Name any four Engineering plastics.
Q.14 Give one example of condensation polymerization.
Q.15 What are polymers with example?
Q.16 Define monomer.
Q.17 Define polymerization.
Q.18 Define degree of polymerization.
Q.19 Define glass transition temperature.
Q.20 Write calculation formula of number average molecular weight of polymer.

SECTION-C

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

Q.21 What are the factors which effect Tg.
Q.22 Discuss condensation polymerization with suitable example.
Q.23 Drive a reaction mechanism of addition polymerization.
Q.24 Describe ionic polymerization.
Q.25 Describe thermodynamic and kinetics requirement of a reaction.
Q.26 Explain geometrical isomerism.
Q.27 Explain macromolecules concept in polymers.