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1st Sem. / Plastic Technology

Subject : Introduction to Polymer Science and Technology

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Natural polymers are

a) Leather b) Cotton

c) Jute d) All of these

Q.2 Elastomeric properties are in

a) Rubbery material b) Steel material

c) Plastic materials d) All of these

Q.3 Unit of viscosity

a) NS/m^2 b) Nm

c) Bar d) N/m^2

Q.4 Thermoplastic materials are

a) PVC b) ABS

c) Teflon d) all of these

Q.24 Define viscosity, drive expression for dynamic viscosity.

Q.25 Define polymer blends and alloy. Give their four applications.

Q.5 Which of the following are addition polymers?

a) PP b) PE

c) PVC d) All of these

Q.6 Degree of polymerization

a) Number of repeating unit

b) Number of monomers

c) Both A & B

d) None of these

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define Newtonian fluid.

Q.8 Define kinematic viscosity and its unit.

Q.9 Define turbulent flow.

Q.10 Define Compressible fluid.

Q.11 Define polydispersity

Q.12 Define polymerization

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain the mechanism of free radical polymerization.

Q.14 Define types of fluids

Q.15 Define weight average molecular weight and number average molecular weight.

Q.16 Define Tg and give the relationship between Tg & Tm.

Q.17 Explain polycondensation mechanism of polymerization.

Q.18 Write two effects of molecular weight of polymer on the properties of polymer.

Q.19 Give Newtons law of viscosity.

Q.20 Write any four factor, which effect glass transition temperature.

Q.21 Write note on bulk polymerization techniques.

Q.22 Write four applications of plastic composites.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Write short note on

a) Amorphous and crystalline polymer

b) Gel permission chromatography