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SEAT No. _____

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SARDAR PATEL UNIVERSITY
M.Sc. Polymer Science & Technology Semester-II Examination – 2018
Monday, 16th April 2018
10:00 a.m. to 1:00 p.m.
PS02CPST23: Polymer Additives

Note: (1) Attempt all questions.

Total marks: 70

(2) Figures to the right indicate full marks.

Que. 1 Answer the following

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- (1) Azodicarbonamide is used as _____ in cellular plastics
(a) Blowing agent (b) Plasticizer (c) Flame retardant (d) None of these
- (2) Viscosity of _____ fluid remains constant at all shear rates at a constant temperature and pressure.
(a) Newtonian (b) Non newtonian (c) Thixotropic (c) None of these
- (3) _____ are used as a thixotropic agent for polyester resin
(a) Zinc oxide (b) Bentonite Clay (c) both a & b (d) None of these
- (4) Oxamide are used as _____
(a) Blowing agent (b) Flame retardant (c) Lubricant (d) None of these
- (5) _____ is a peroxide decomposer
(a) Dibutyl tin maleates (b) Stearic acid (c) Dilauryl thiodipropionate (d) None of these
- (6) _____ absorb the energy generated by impact and dissipate it in nondestructive fashion
(a) Toughening agent (b) Adhesion promoter (c) Anti ageing additive (d) None of these
- (7) Chemical compound that modify pyrolysis reactions of polymers or oxidation reactions implies in the combustion by slowing them down or by inhibiting them are known as _____
(a) Toughening agent (b) blowing agent (c) flame retardant (d) none of these
- (8) Minimum voltage which causes a permanent loss of dielectric properties under specified conditions is known as _____
(a) Dielectric strength (b) Antistatic (c) Flame Retardant (d) None of these

Que. 2 Answer the following (any seven)

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- (1) Define additive and write the classification of additive according to their specific function.
- (2) Write the resonance stabilization in primary antioxidant
- (3) Write the normal rule for the selection of lubricants
- (4) Discuss fungicide
- (5) Explain Excited state quenchers
- (6) Which are major friction problems encountered in plastic processing
- (7) Define bleeding & blooming
- (8) Explain the different factor on which lubricant effectiveness depend?
- (9) Give an account on solid lubricant

[P.T.O.]

- Que. 3 (a) Explain the special stabilizer for halogenated polymer 06
(b) Discuss the external lubricants
OR
(b) Answer the following 06
1. Discuss unavoidable side effect of additive
2. Explain the compatibility and mobility of additives
OR
(b) Answer the following 06
1. Explain the additive which alter the polarity of the surface
2. Explain chelating agent as metal deactivator
- Que. 4 (a) Write the mechanism for polymer degradation. Explain primary stabilizer and resonance stabilization in primary antioxidant 06
(b) Discuss the additive used in expansion process 06
OR
(b) Answer the following 06
1. Explain the Antiblock additives
2. Discuss the synergistic stabilizer system
- Que. 5 (a) Explain the mechanism of natural radiation on ageing of plastics and Explain the role of carbon black, pigment and UV absorbers 06
(b) Answer the following 06
1. Discuss the method of incorporation of additives into polymer matrix
2. Write a note on antistatic agents
OR
(b) Answer the following 06
1. Give a brief account on filler
2. Write a note on thixotropic agents
- Que. 6 (a) Write a note on plasticizer 06
(b) Discuss the burning mechanism of plastics and Explain flame retardant agents 06
OR
(b) Answer the following 06
1. Explain Toughening agent
2. Explain the compatible uv light absorbers