

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER • 2014****Subject Code: 162305****Date: 03-12-2014****Subject Name: Additives and Compounding****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

- Q.1** (a) List at least 10 types of Plastics Additives with examples and their functions. **07**
(b) Defines (a) Fillers (b) Pigments (c) Plasticizers and (d) Stabilizers **07**
- Q.2** (a) Give at least 20 types of Fillers / Reinforcements with their characteristics/ Main applications. **07**
(b) Write in short about the effect of Fillers on (a) Mechanical Properties (b) Thermal Properties (c) Moisture contents and (d) Reinforcement Mechanism on Plastics. **07**
- OR**
- (b) Discuss in details about the Calcium Carbonate as Fillers. **07**
- Q.3** (a) Write short notes on (a) Kaolin and (b) Microspheres **07**
(b) In relation to Surface Modification, write short notes on (a) Particle Geometry (b) Coatings (c) Microspheres and (d) Nanotechnology **07**
- OR**
- Q.3** (a) Discuss Fibre Reinforcement in detail by giving its function, properties affected, material/characteristics, advantages, disadvantages and new developments. **07**
(b) Discuss the basic properties of Fibers used for Reinforcement. List the various types of fibers. Discuss Glass Fiber in detail by giving its types and its main properties. **07**
- Q.4** (a) What do you understand by Colorants, Pigments and Dyes as Additives for Plastics for giving special effects. Discuss its functions, properties affected, material/characteristics, advantages, disadvantages and new developments. **07**
(b) What are the Pigments used as Additives, for the special effects. Describe in short about (i) Aluminum Pigments (ii) Pearlescent (iii) Light Interference Pigments and (iv) Fluorescents. **07**
- OR**
- Q.4** (a) Discuss the Pigments used for the Laser Marking and Engineering Plastics **07**
(b) List the various types of White and Black Pigments and Colors. Give advantages and the disadvantages of them **07**
- Q.5** (a) List the various Polymer Heat Stabilizers? Discuss the Antioxidants in detail **07**
(b) How do the U V Stabilizers work? Write in short about the UV Screening Pigments & Scavengers. **07**
- OR**
- Q.5** (a) Explain in detail about the Flame Retardants and it's working. List the main types of Flame Retardant Additives with its mechanism and Technical comments. **07**
(b) Give details of Antistatic Conductive Additives. Give its classification and explain the Metallic Additives in detail. **07**
