

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012****Subject code: 712404N****Date: 10-01-2013****Subject Name: Additive & Compounding of Plastics****Time: 02.30 pm – 05.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain Compounding for modifying surface properties **07**
(b) Explain the action of antioxidants on plastics **07**
- Q.2** (a) Explain various compounding Techniques for thermoplastics with their advantages and disadvantages **07**
(b) Write a note on blowing agents with examples. **07**
OR
(b) Explain how a thermoplastic get toughened **07**
- Q.3** (a) Plasticizer and heat Stabilizer make PVC a versatile material. Explain this in detail with suitable example. **07**
(b) What is the mechanism of Flame retardancy? Which polymers require flame retardancy? How is the flame retardancy achieved? **07**
OR
- Q.3** (a) Write any four additives that assist processing, explain their function and benefits **07**
(b) Elaborate their chemistry and mechanism **07**
- Q.4** (a) What are the methods available for incorporation of additive into polymer materials **07**
(b) Explain the limitations of mixing and compounding **07**
OR
- Q.4** (a) Draw a schematic diagram of an intensive mixer, indicating the various parts. Explain their functions and applications **07**
Q.4 (b) Explain various compounding techniques used for PVC. **07**
- Q.5** (a) Brief on the principle of material selection used for bowls for microwave oven **07**
(b) Mention a few applications of plastics in agriculture **07**
OR
- Q.5** (a) Discuss the application of plastics in packaging with significance **07**
(b) How do you select the materials for manufacturing Plastic Gears? Explain with example. **07**
