

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII • EXAMINATION – SUMMER 2013

Subject Code: 182302**Date: 13/05/2013****Subject Name: Plastics Alloys and Blends****Time: 10:30 am TO 01:00 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) Define following 1) IPN 2) Liquid crystal polymer 3) Compatilizers 4) HIPS 07
5) Phase diagrams 6) Composites
7) Engineering Plastics.
- (b) Differentiate between Alloys and blends, and also compare Banbury mixer 07
and two roll mill used in polymer blending
- Q.2** (a) Explain the reasons for making a polymer blends and How blend 07
components are selected?
- (b) Explain the Huggins-Flory theory for polymer blends 07
- OR**
- (b) Explain the significance of Gas lattice model in blends. 07
- Q.3** (a) Explain the theory of mixing in polymer blends with the flow behavior in 07
blending equipments.
- (b) Describe the working of hot and cold mixers with suitable examples. 07
- OR**
- Q.3** (a) How thermoplastics elastomers are prepared? Explain its special properties 07
and applications.
- (b) How reactive blending is differ from normal blends, describe in details? 07
- Q.4** (a) Discuss in detail the properties of PVC/ NBR blends and its application. 07
- (b) Explain the working of FTIR in blend characterisation technique. 07
- OR**
- Q.4** (a) How Differential Scanning Calorimetry (DSC) is used in characterization of 07
polymers?
- Q.4** (b) Explain the working of twin screw compounders with suitable sketches. 07
- Q.5** (a) How scanning electron microscope (SEM) is working ? 07
- (b) Describe the properties and application of PPO/HIPS blends. 07
- OR**
- Q.5** (a) Explain the polymer miscibility with phase equilibrium calculations. 07
- (b) Describe in detail the importance of polymer blends in any one commercial 07
product manufacturing.
