

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII • EXAMINATION – SUMMER 2014

Subject Code: 182302**Date: 31-05-2014****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 **07**
- | | |
|-----------------------------|----------------------------------|
| 1. Engineering Polymer | 2. Lower Critical Solution Temp. |
| 3. Composite | 4. Full IPN |
| 5. Homologous Polymer Blend | 6. Phase Domain |
| 7. Thermoplastic Elastomer | |
- (b)** Discuss PC/ABS blend in detail. **07**
- Q.2 (a)** Explain Thermodynamic approach for Polymer-Polymer Miscibility. **07**
- (b)** Explain how to design a Polymer Blend. **07**
- OR**
- (b)** Explain the Huggins-Flory theory in detail. **07**
- Q.3 (a)** Explain Following **07**
- a. Difference between Polymer Alloy and Blend.
 - b. Polymer Compatibility.
- (b)** Tabulate and explain Advantages and disadvantages of some Engineering Polymers and Modifiers for blending. **07**
- OR**
- Q.3 (a)** Enlist various equipments used for making polymer blends and explain the design and advantages of twin screw compounder. **07**
- (b)** Enlist and explain Techniques for determination of Polymer-Polymer Miscibility. **07**
- Q.4 (a)** Discuss PC/PBT blend in detail. **07**
- (b)** Discuss how barrier films manufacture from Polymer Alloys/Blends are most suitable for food packaging. **07**
- OR**
- Q.4 (a)** Discuss PVC/ABS blend in detail. **07**
- (b)** Discuss in detail about Polymer Blends used in cable industry. **07**
- Q.5 (a)** Enlist the Blending Processes. Explain Melt Blending in detail. **07**
- (b)** Explain characterization of blends in detail. **07**
- OR**
- Q.5 (a)** Explain Following **07**
- a. Thermoplastic Elastomers.
 - b. Elastomeric Alloys.
- (b)** Explain with suitable examples How Polymer blends are useful in defence applications. **07**
