Seat No.: _____ Enrolment No._____

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**

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