Seat No.:	Enrolment No

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION - WINTER 2015

Subject Code:182302 Date:04/12/2015

Subject Name:Plastic Alloys & Blends

Time: 2:30pm to 5:00pm 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 the reasons for making a polymer blends and How blend components are selected?	07	
	(b)	Differentiate between Alloys and blends, and also compare Banbury	07	
Q.	2 (a)	mixer and two roll mill used in polymer blending Explain Thermodynamic approach for Polymer-Polymer Miscibility.	07	
	(b)	Define following 1) IPN 2) Liquid crystal polymer 3) Compatilizers 4) HIPS 5) Phase diagrams 6) Composites 7) Engineering Plastics.	07	
		OR		
	(b)	Explain the Huggins-Flory theory for polymer blends.	07	
Q.	3 (a)	Explain the role phase diagrams in polymer blend characterization, give examples.	07	
	(b)	Describe the working of hot and cold mixers with suitable examples. OR	07	
Q.	3 (a)	Describe the properties of a blend which contain elastomer and thermoplastics NBR/ PVC and explain how it is differ from other blends.	07	
	(b)	Explain the working of FTIR in blend characterisation technique.	07	
0	(b)		07	
Q.	4 (a)	How Differential Scanning Calorimetry (DSC) is used in characterization of polymer blends?	07	
	(b)	Explain the significance of Gas lattice model in blends. OR	07	
Q.	4 (a)	How scanning electron microscope (SEM) is working for polymer blends?	07	
	(b)	Describe in detail the importance of polymer blends in any one commercial product manufacturing.	07	
Q.	5 (a)	Enlist the Blending Processes. Explain Melt Blending in detail.	07	
	(b)	Explain Following a. Thermoplastic Elastomers.	07	
		b. Elastomeric Alloys. OR		
Q.	5 (a)	Which is major polymer blends used in an automobile tyre industry? How it is working?	07	
	(b)	Discuss how barrier films manufacture from Polymer Alloys/Blends	07	
	~	are most suitable for food packaging.		