

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018**

**Subject Code: 2182302**

**Date: 04/05/2018**

**Subject Name: Polymer 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.**

		<b>MARKS</b>
<b>Q.1</b>	(a) Define a) Polymer alloy b) Polymer blend c) Engineering plastics	<b>03</b>
	(b) What are the reasons for blending.	<b>04</b>
	(c) List the steps in designing a polymer blend.	<b>07</b>
<b>Q.2</b>	(a) What are Thermoplastic Elastomer? List its types.	<b>03</b>
	(b) Explain briefly about PVC/ABS blends.	<b>04</b>
	(c) List the methods of blending. Explain mechanical mixing in detail.	<b>07</b>
	<b>OR</b>	
	(c) Write a short note on polymer blends used in cable industries.	<b>07</b>
<b>Q.3</b>	(a) What is a compatibilizer? Explain the compatibilization mechanism using specific interactive group.	<b>03</b>
	(b) List the advantages and disadvantages of Thermoplastic Elastomer.	<b>04</b>
	(c) Write a short note on blends of PC.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Discuss about Noryl Blends.	<b>03</b>
	(b) Explain polymer-polymer miscibility by thermodynamic approach.	<b>04</b>
	(c) Discuss briefly about how blend components are selected.	<b>07</b>
<b>Q.4</b>	(a) List the applications of Thermoplastic Elastomer.	<b>03</b>
	(b) Explain the solution mixing technique for preparing polymer blends.	<b>04</b>
	(c) Explain the Differential Scanning Calorimetry technique to characterize a blend.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) What is reactive compatibilization? What are the advantages of Reactive compatibilization?	<b>03</b>
	(b) Explain briefly about Twin screw extruders and its advantages in polymer mixing.	<b>04</b>
	(c) Explain the Thermo Gravimetric Analysis to characterize a blend.	<b>07</b>
<b>Q.5</b>	(a) Discuss briefly about properties and applications of PVC/NBR blends.	<b>03</b>
	(b) Write a short note on Inter Penetrating Networks	<b>04</b>
	(c) Explain the construction and working of Two roll mill.	<b>07</b>

**OR**

- Q.5** (a) Discuss about ABS copolymer. **03**  
(b) Write a short note on Scanning Electron Microscope (SEM). **04**  
(c) Explain the construction and working of a Banburry mixture. **07**

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