Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Sem. – IInd - Examination – June/July- 2011

Subject code: 1721605

Subject Name: Polymer Processing

Date:27/06/2011 **Time: 10:30 am – 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)	Explain the Polymer Processing & List out the various processing methods by which polymers are made into consumer products.	**07**
(B)	What do you understand by mixing & compounding of polymeric materials? Explain the basic principles involved in the general theory of mixing and its limitations.	**07**
Q.2(A)	Explain the working of Ribbon Blender & Continuous Blender with simple functional sketches.	**07**
(B)	Draw the design principle & List the main uses of Blending machines like (i) Different types of Stirrer (ii) Z-Blade.	**07**
	OR	
(B)	Answer the following.	
(i)	How would you select a blender for carrying out mixing & compounding a particular polymer?	**03**
(ii)	Describe the working of an intensive Dry Mixer with Sketch.	**04**
Q.3(A)	What are the conditions that may lead to uneven thickness in a calendered polymer sheet? Explain how the thickness is controlled?	**07**
(B)	What is Thermoforming? Discuss the basic concepts & the important aspects of the process.	**07**
	OR	
Q.3(A)	Explain in detail about Trouble Shooting in Calendering Process.	**07**
(B)	Briefly mention about important application of different Therforming processes as are normally recommended for producing Polymer parts.	**07**
Q.4(A)	Answer the following.	
(i)	Discuss the fundamentals of Extrusion.	**04**
(ii)	Explain in detail about selection of screw for specific polymers.	**04**
(B)	Write the advantages & disadvantages of Rotational Moulding.	**06**
	OR	
Q.4(A)	Discuss the Extrusion Characteristics of Single Screw Extruder and Twin Screw Extruder.	**08**
(B)	Write the comparison between Extrusion & Injection Blow Moulding.	**06**
Q.5(A)	Discuss the comparison of Compression Moulding & Transfer Moulding Technique.	**07**
(B)	Explain in detail about Sulphur Vulcanisation in Rubber Compounding.	**07**
	OR	
Q.5(A)	What are the two important aspects of Injection Moulding on which the product quality & dimensional tolerances depend?	**07**
(B)	Discuss in detail about Vulcanisation Conditions.	**07**

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