Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2721607 **Date: 30/05/2015**

Subject Name: Polymer Materials & Testing

Time: 2:30 PM – 5:00 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)	Discuss in general about Nitrile Rubber with their formula.	(07)
	(b)	Describe in detail about Natural Rubber with their formula, grades ,uses and properties.	(07)
Q.2	(a)	Write the properties and common household uses for Polyethylene Terepthalate, High Density Polyethylene and Polystyrene.	(07)
	(b)	Give the difference between amorphous and crystalline thermoplastics with examples.	(07)
		OR	
	(b)	In how many categories Plastics can be divided? Discuss all in detail.	(07)
Q.3	(a)	Describe the Properties of Synthetic Fibres.	(07)
	(b)	Write about carding &drafting process for Cotton fibre manufacturing.	(07)
		OR	
Q.3	(a)	List the different methods of Spinning a Polymer. Explain in detail about the latest method used for Spinning a Polymer. Write the common finishing operations carried out after spinning of the fibre.	(07)
	(b)	List the different types of artificial Silk derived from Cellulose. Discuss about any one in detail.	(07)
Q.4	(a)	Explain in brief about the purpose of testing polymeric material and also state significance of sampling in the testing.	(07)
	(b)	Write a note on methods of testing, dealing with fire hazards of polymers.	(07)
		OR	
Q.4	(a)	How does short term flexural characteristics of a polymer material is measured? Discuss in detail.	(07)
	(b)	Give a brief account of testing, weathering of polymeric materials when exposed to ultraviolet rays.	(07)
Q.5	(a)	ñPolymers are widely used in electronic applications. ñ Discuss this statement in light of various electrical properties of polymers.	(07)
	(b)	Write a note on DTA technique, used to carry out thermal analysis of a polymeric material.	(07)
		OR	
Q.5	(a)	Define the term (i) Resilience (ii) Rebound Resilience. List the different methods used for determination of Rebound Resilience. Discuss any one in detail.	(07)
	(b)	What do you understand by volume resistivity and surface resistivity of polymer material? Explain test method to measure surface resistance of polymer.	(07)