Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 172305 Date: 03-12-2013

Subject Name: Plastics Testing and Instrumental Analysis

Time: 10:30 TO 01:00 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)**	What is Testing? List out its basic concept and Explain Specification and Standards.	**07**
	(b)	Sketch and Explain generalized stress-strain curve for plastics .Also explain related terminology.	**07**
Q.2	**(a)**	Define tensile strength? What are the factors influence the tensile strength of plastic material? Provide brief steps for performing tensile test.	**07**
	(b)	Define and explain the term Arc Resistance. Explain procedure to determine Arc Resistance of Plastics with neat sketch.	**07**
		OR	
	(b)	Write a short note on any two of the following. a) Abrasion Test b) Stress Relaxation c) Compression Test	**07**
Q.3	**(a)**	Write in detail about testing of UPVC pipes as per IS-4985-2000 for potable water supply.	**07**
	(b)	Define HDT and explain the test procedure and its significance of the test.	**07**
		OR	
Q.3	**(a)**	Explain ESCR test in detail and its significance of the test.	**07**
	(b)	Define Glass transition temperature (Tg) and explain factors affecting Tg.	**07**
Q.4	**(a)**	Define VSP and explain the test procedure with factors affecting	**07**
	(b)	Explain the Term Hardness. List the Hardness Tests used for Plastics. Explain Rockwell Hardness Test.	**07**
		OR	
Q.4	**(a)**	Define Thermal Conductivity? How do you determine it for plastics by Guarded hot plate method?	**07**
	(b)	What is Impact Strength? List out types of it? Explain Izod Impact Test.	**07**
Q.5	**(a)**	Define Thermal Conductivity. Explain the Test to measure Thermal Conductivity of Plastics with neat sketch.	**07**
	(b)	Compare: Flexural Test with Tensile Test. Explain factors affecting Tensile Test.	**07**
		OR	
Q.5	**(a)**	With the help of neat sketch explain Shear Test in detail.	**07**
	(b)	Write short notes on : (1) Dielectric Strength (2) Young's Modulus of elasticity	**07**

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