Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

Subject Code: 3362304

DIPLOMA ENGINEERING - SEMESTER -VI • EXAMINATION - WINTER 2015

T	Subject Name: PLASTICS TESTING AND QUALITY MANAGEMENT Time: 02:30 PM TO 05:00 PM Total Marks: 70 Instructions: 1. Attempt all questions. 2. Make Suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 4. Use of programmable & Communication aids are strictly prohibited. 5. Use of only simple calculator is permitted in Mathematics. 6. English version is authentic.				
Q.1	1.	Answer any seven out of ten. Define standard and specification.		14	
	2.	Define conditioning and give its designation			
	3.	Give full forms of (in English only with correct spelling): 1) ASTM 2) SPI			
	4.	Define: 1) creep 2) plastic limit			
	5.	Define: 1) Haze 2) Refractive index			
	6.	Define: 1) ESC 2) tensile strength			
	7.	Give full forms of (in English only with correct spelling):1) SI UCL	PC 2)		
	8.	List various types of failures in plastic materials.			
	9.	Define: 1) Arc resistance 2) surface resistivity			
	10.	Define: 1) yield point 2) stress			
Q.2	(a)	Explain factors affecting the results of Dielectric Strength Test		03	
	(a)	OR Draw schematic figure of co efficient of thermal expansion test s	setup.	03	
	(b)	Explain outdoor weathering resistance of plastics.		03	
	(b)	OR Describe spiral flow test.		03	
	(c)	Explain specific gravity test.		04	
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Date: 10/12/2015

	(c)	List various devices/materials for ultrasonic testing and give basic sequence of operation in ultrasonic measurement.	04
	(d)	Explain any one of the accelerated weathering tests for plastics.	04
		OR	
	(d)	Describe pulse echo technique for wall thickness measurement.	04
Q.3	(a)	Explain types of sampling plans used in SQC.	03
		OR	
	(a)	Give classification of sampling plans.	03
	(b)	Explain factors affecting the test result of tensile strength.	03
	(b)	OR Define tensile strength. Draw tensile strength test specimen with dimensions, and give the equation to calculate tensile strength.	03
	(c)	Explain factors affecting the Izod impact strength test	04
		OR	
	(c)	Draw and explain the stress strain curve.	04
	(d)	Define oxygen index. Give the process steps for measurement of it.	04
		OR	
	(d)	Define oxygen index. and draw the neat and labeled diagram for the test set up for it.	04
Q.4	(a)	Define HDT and Explain the ASTM test procedure for HDT.	03
		OR	
	(a)	Define VST and Explain the ASTM test procedure for VST.	03
	(b)	Explain ASTM test procedure for dielectric constant test.	04
		OR	
	(b)	Explain ASTM test procedure for Refractive index test.	04
	(c)	Define Hardness. In detail, expalin the ASTM test procdure for measurement of Rockwell hardness of a plastic maerial.	07
Q.5	(a)	Write a short note on "SQC for extrusion"	04
	(b)	Explain importance of quality control in plastic industries.	04
	(c)	List various failure analysis techniques. Explain any one in detail.	03
	(d)	Give reasons for testing.	03