Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(New) • EXAMINATION – WINTER 2016

Subject Code:2132303 Date:06/01/2017

Subject Name:Basic of Plastic Material Testing

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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	Define specification. What is the purpose of specification?	
	2	Define proportional limit.	
	3	Define Testing. List any four reasons for Testing.	
	4	What is specific gravity of PVC?	
	5	Give full form of I.S.O and S.P.I	
	6	List the material characterization tests.	
	7	For flexural strength the formula for calculating maximum stress S=_____	
	8	Soft & weak material is characterized by high modulus, low yield stress and high elongation at break point.(True/False)	
	9	MFI test is used to measure flow behavior of Thermosets (True/False)	
	10	Give any two examples of self extinguishing plastics material.	
	11	Draw the test specimen with dimensions for tensile testing as per ASTM D 638.	
	12	The most widely accepted abrader in the plastic industry is called the _____ abrader.	
	13	HIPS has high Rockwell hardness value but poor abrasion resistance.(True/False)	
	14	What do you mean by 38/18/16 T 25/70	
Q.2	**(a)**	List the preliminary tests carried out for the simple identification of plastics.	**03**
	(b)	Width and thickness of tensile test specimen is 6mm and 2.80mm respectively. If tensile strength at break is 384.94 kg/cm^2. Calculate the load recorded at break.	**04**
	(c)	Explain the Tensile strength Test for plastics material in detail.	**07**
		OR	
	(c)	List the specimen preparation techniques for thermosets. Explain any one in detail.	**07**
Q.3	**(a)**	Explain copper wire test for halogens.	**03**
	(b)	Define conditioning. List purpose of conditioning.	**04**
	(c)	Explain the test method to determine Density of plastic material in detail.	**07**
		OR	
Q.3	**(a)**	List types of Impact tests.	**03**
	(b)	Draw and explain stress-strain curve for the following	**04**

materials (1) PF (2) Polyacetal (3) LDPE (4) PTFE

	(c)	Explain the flow behavior test to be carried for Thermoplastics with neat sketch.	**07**
Q.4	**(a)**	Define (1) Yield strength (2) Modulus of elasticity (3) Stress	**03**
	(b)	Explain test method to determine water absorption of plastics.	**04**
	(c)	Define flexural strength. Explain the flexural strength test in detail with factors affecting the test results.	**07**

OR

Q.4	**(a)**	Explain spiral flow test in brief.	**03**
	(b)	Define compressive strength. Explain the test carried out to determine compressive strength of plastics in brief.	**04**
	(c)	List different types of Hardness test carried out for plastics. Explain any one in detail.	**07**
Q.5	**(a)**	List the factors affecting the tensile test results.	**03**
	(b)	Give density of the following (1) PC (2) Nylon (3) ABS (4) PP	**04**
	(c)	Define Abrasion resistance. Explain Abrasion test in detail.	**07**

OR

Q.5	**(a)**	Explain drop impact test in brief.	**03**
	(b)	Give difference between Izod and Charpy Impact test.	**04**
	(c)	Explain Izod impact test in detail with factors affecting the test results.	**07**

****