

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (New) EXAMINATION – WINTER 2018****Subject Code: 2132303****Date: 05/12/2018****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	(a) Define specification. What is the purpose of specification?	03
	(b) Define Testing. List reasons for Testing.	04
	(c) Explain the Tensile strength Test for plastics material in detail.	07
Q.2	(a) Give full form of ASTM, I.S.O and S.P.I	03
	(b) (1) List the material characterization tests.	04
	(2) Give any two examples of self extinguishing plastics material.	
	(3) Draw the test specimen with dimensions for tensile testing as per ASTM D 638.	
	(4) MFI test is used to measure flow behavior of Thermosets.(True/False)	
	(c) Explain Stress-Strain curve in detail.	07
	OR	
	(c) List the specimen preparation techniques for thermoplastic. Explain about Injection Molding in detail.	07
Q.3	(a) Define conditioning. List purpose of conditioning.	03
	(b) What is Hygroscopic material? Give the name of Plastic materials which are Hygroscopic.	04
	(c) Explain the test method to determine Density of plastic material in detail.	07
	OR	
Q.3	(a) Explain standard Test method to determine Water Absorption of Plastics.	03
	(b) List types of Impact tests.	04
	(c) Define (1) Yield strength (2) Modulus of elasticity (3) Stress (4) Yield Point (5) strain (6) Elongation (7) Toughness	07
Q.4	(a) List the preliminary tests carried out for the simple identification of plastics.	03
	(b) Width and thickness of tensile test specimen is 8mm and 3mm respectively. If tensile strength at break is 384 kg/cm ² . Calculate the load recorded at break.	04
	(c) List the specimen preparation techniques for thermosets. Explain any one in detail.	07
	OR	
Q.4	(a) Explain copper wire test for halogens.	03
	(b) Explain in brief about chemical confirmation test for polyolefins and caprolactum.	04

- Q.5** (a) (1) What is Standard Laboratory Atmosphere? **03**
(2) Cup flow test and Spiral flow test is used to measure flow Behavior of Thermosets.(True/False)
(3) _____ plastic material produced metallic sound when dropped on hard surface. (a) PS (b) FPVC (c) Polyamides
- (b) Define Flexural strength. List and explain the factors affecting the test result. **04**
- (c) Define Melt flow index. Explain the test to determine melt flow behavior of plastic material in detail with factors affecting the test results. **07**

OR

- Q.5** (a) Calculate compressive strength of the specimen having Height 2.5 cm ,Length 1.4 cm and Width 1.4 cm.Load recorded at crushing is 525 kg. **03**
- (b) Short note: Abrasion resistance test **04**
- (c) Define Hardness. Explain Rockwell hardness test in detail. **07**

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