

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2132303****Date: 11/06/2019****Subject Name: Basic of Plastic Material Testing****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.

		Marks
Q.1	(a) What is Testing? List various reasons for testing.	03
	(b) Give characteristics of plastics, sink/float when immersed in to water (a) PE (b) PVC (c) PS (d) Nylon.	04
	(c) Define MFI. Explain Melt flow index test procedure with diagram.	07
Q.2	(a) Give full name of: ASTM, ISO, and BS.	03
	(b) Give density of: HDPE, PP, PVC and PS.	04
	(c) What is ASTM standard to determine Tensile Test for plastics material? Draw tensile test sample and explain test procedure in detail.	07
OR		
	(c) Explain stress-strain behavior for Plastic materials.	07
Q.3	(a) Draw the test specimen as per ASTM for Compression, Abrasion, and Flexural strength.	03
	(b) Width and thickness of tensile test specimen is 8mm and 3mm respectively. If tensile strength at yield point is 550 kg/cm ² . Calculate load recorded at yield point.	04
	(c) Discuss determination of specific gravity using specific gravity bottle/pycnometer.	07
OR		
Q.3	(a) Define: Standard, Specification, and Conditioning.	03
	(b) Explain cup flow test for thermoset materials.	04
	(c) What is Hardness? Give ASTM standard for Rockwell hardness. Explain Rockwell hardness test.	07
Q.4	(a) Write flame characteristic and kinds of smoke generated during burning of PE and PVC.	03
	(b) Explain test method to determine water absorption of plastics.	04
	(c) What is flexural strength? Explain the flexural strength test in detail with ASTM standard, procedure and factors affecting the test results.	07
OR		
Q.4	(a) List three thermoplastic and three thermoset materials having self-extinguishing properties.	03
	(b) Define: (1) Yield point (2) Modulus of elasticity (3) Toughness (4) Proportional limit.	04
	(c) Explain the test method to determine Density of plastic material in detail.	07
Q.5	(a) Give any three example of transparent plastic.	03
	(b) Discuss sample preparation technique for thermoplastic materials.	04
	(c) Explain Izod impact test 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 490 kg. 03
- (b) Explain spiral flow test with neat diagram. 04
- (c) Explain charpy impact test in detail with neat sketch. 07

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