

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III (New) EXAMINATION – WINTER 2015

Subject Code:2132303**Date:29/12/2015****Subject Name: Basic of Plastic Material Testing****Time: 2:30pm to 5:00pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

		MARKS
Q.1	Short Questions	14
	1 Define Testing.	
	2 Define Standards. What is purpose of Standards?	
	3 Define Specification. Give reason for specification.	
	4 What is the full form of ASTM & BS?	
	5 List specimen preparation techniques from Thermoset material.	
	6 What is Poisson's ratio?	
	7 Define stiffness.	
	8 The ability of a material to resist forces that tends to crush is called _____	
	9 What is Standard Laboratory Atmosphere?	
	10 Define Conditioning.	
	11 Cup flow test and Spiral flow test is used to measure flow Behavior of Thermosets.(True/False)	
	12 Density range of LDPE is _____	
	13 _____ plastic material produced metallic sound when dropped on hard surface. (a) PS (b) FPVC (c) Polyamides	
	14 Give any two examples of Self Extinguishing plastics material.	
Q.2	(a) List purpose of Testing.	03
	(b) List purpose of Conditioning.	04
	(b) List the specimen preparation techniques for Thermoplastics. Explain about Injection molding with significance and factors affecting.	07
	OR	
	(b) Explain specimen preparation techniques for Rigid and Soft Plastic sheet.	07
Q.3	(a) List steps involved in the Preliminary Test/Identification of Plastics.	03
	(b) Explain any two methods of the Preliminary Test/Identification of Plastics.	04
	(c) Explain Flexural Test in detail with neat sketch and also explain factors affecting the test result.	07
	OR	
Q.3	(a) Explain the test to confirm presence of Caprolactum in Nylon 6.	03

- (b) Give Flame characteristics & kinds of smoke generated by LDPE and SAN when subjected to Burning. **04**
- (c) Define Specific Gravity. Explain the test procedure to determine Specific Gravity. What is Specific Gravity of PVC, Nylon 66 and PS. **07**
- Q.4** (a) What is Hygroscopic material? Give the name of Plastic materials which are Hygroscopic. **03**
- (b) Explain standard Test method to determine Water Absorption of Plastics. **04**
- (c) Define Tensile Test. Explain standard Test to measure Tensile strength of plastics with neat sketch and factors affecting the test results. **07**
- OR**
- Q.4** (a) Define Stress, Strain and Yield point. **03**
- (b) Explain in brief about Modulus of Elasticity, Proportional Limit and Toughness. **04**
- (c) Explain about Stress-Strain behavior of Polymer with graph. **07**
- Q.5** (a) List different types of Mechanical Test carried out for Plastics. **03**
- (b) Draw and Explain stress-strain curve for the following material: (1) PTFE (2) PF (3) PC (4) PE **04**
- (c) Define Hardness. List the Hardness test carried out for Plastics. Explain Hardness test carried out for Polyacetal. **07**
- OR**
- Q.5** (a) Explain compressive strength Test in brief. **03**
- (b) 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. **04**
- (c) List types of Impact Test. Explain Izod Impact Test in detail. **07**
