Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(New) EXAMINATION – SUMMER 2016

Subject Code:2132303 **Date:04/06/2016**

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 Testing and Standards.	
	2	Define yield strength and proportional limit.	
	3	What is crack initiation energy?	
	4	List the factors affecting the Impact strength.	
	5	Many polymer do not break under flexural load even after a long deflection for that type of material flexural stress given at _____% strain.	
	6	Give full form of ISO and ASTM.	
	7	List the specimen preparation techniques for thermoset material.	
	8	The material like PTFE and POM are milky white because of their high ___ nature.[Amorphous/Crystalline]	
	9	Define stress and strain.	
	10	Give name of any two thermoplastic material which give metallic sound on drop test.	
	11	What is the specific gravity of LDPE?	
	12	Which of the following plastics sinkwhen immersed in to water? (a) LDPE (b) PP (c) HMHDPE (d) PVAc	
	13	Define specific gravity.	
	14	What is Newtonian liquid?Define	
Q.2	**(a)**	Explain in brief how the specimen prepared from liquid resin?	**03**
	(b)	Define and explain in brief about conditioning .	**04**
	(c)	List the specimen preparation techniques for thermoplastic. Explain about Injection Molding in detail.	**07**
		OR	
	(c)	List the purpose of testing.	**07**
Q.3	**(a)**	List the preliminary tests are carried out for the simple identification of plastics.	**03**
	(b)	Write flame characteristic and kinds of smoke generated during burning of PS and PP.	**04**
	(c)	For plastics material, explain about stress-strain curve in detail	**07**
		OR	
Q.3	**(a)**	Explain copper wire test for halogens.	**03**
	(b)	Explain in brief about chemical confirmation test for	**04**

		polyolefins and caprolactum.	
	(c)	Explain tensile strength test in detail.	**07**
Q.4	**(a)**	Explain specific gravity test for plastic material in brief.	**03**
	(b)	Define: (1) Yield point (2) proportional limit (3) Toughness (4) Modulus of elasticity	**04**
	(c)	Explain flexural strength test for plastics. Explain the factors affecting the test result in brief.	**07**
		OR	
Q.4	**(a)**	Give the density of the following: (1) PTFE (2) Nylon (3) PMMA	**03**
	(b)	List the different Impact test carried out for plastic material.	**04**
	(c)	Explain the factors affecting the Impact strength.	**07**
Q.5	**(a)**	Define compressive strength. Describe the test carried out to determine compressive strength of plastics material.	**03**
	(b)	Explain Drop Impact testin brief.	**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)**	List the different types of hardness test carried out for plastics material.	**03**
	(b)	Explain about Abrasion Resistance test in brief.	**04**
	(c)	Define Hardness. Explain Rockwell hardness test in detail.	**07**

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