

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2024****Subject Code:3152308****Date:31-05-2024****Subject Name: Plastics Testing-II****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.
4. Simple and non-programmable scientific calculators are allowed.

			MARKS
Q.1	(a)	Define: Dielectric Strength, Vicat softening temperature, Refractive index.	03
	(b)	Give the full form of DSC, TGA, TMA and DMA.	04
	(c)	Explain test procedure for determination of Heat Deflection Temperature (HDT) of Plastics with neat diagram.	07
Q.2	(a)	Give ASTM standards for: Oxygen Index Test, ESCR, HDT.	03
	(b)	Define coefficient of thermal expansion and explain test procedure to determine coefficient of linear thermal expansion.	04
	(c)	Discuss Gel Permeation Chromatography (GPC).	07
OR			
	(c)	Discuss test procedure to determine Oxygen index and explain factors affecting test results.	07
Q.3	(a)	List the major environmental factors that seriously affect plastics and explain about them in brief.	03
	(b)	Explain importance of thermal analysis.	04
	(c)	Give significance of Environmental stress cracking resistance (ESCR) and Explain test procedure to determine ESCR with neat diagram.	07
OR			
Q.3	(a)	Explain different attachments of DMA and explain its importance.	03
	(b)	Explain Torsion pendulum test in short.	04
	(c)	Explain accelerated weathering using fluorescent UV.	07
Q.4	(a)	Give two names of inert gas and its importance.	03
	(b)	Explain in short immersion test method carried out for plastics	04
	(c)	Explain use Brookfield Viscometer and factor affecting.	07
OR			
Q.4	(a)	What is weatherometer?	03

- (b) What is Arc Resistance and derive its significance? **04**
- (c) Explain UL94 flammability and its test procedure **07**
- Q.5** (a) Explain solvent stress cracking resistance. **03**
- (b) Define definition and equipment arrangement of VSP. **04**
- (c) Explain Di-electric Strength and its test procedure **07**
- OR**
- Q.5** (a) Define: Luminous transmittance, Haze and Brittleness temperature. **03**
- (b) Write a short note on Refractive index test. **04**
- (c) Explain Capillary Viscometer test procedure used to determine Intrinsic viscosity. **07**
