

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023

Subject Code: 3152308

Date: 20-12-2023

Subject Name: Plastic Testing-II

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.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Give the equation of force and mass added to achieve stress in HDT.	03
	(b) Derive the factors which influence the results of HDT.	04
	(c) Explain the method and sample size of VSP.	07
Q.2	(a) Explain Dielectric constant in brief.	03
	(b) Explain the theory of Surface resistivity.	04
	(c) What is Arc resistance and what is the need to check arc property?	07
OR		
Q.3	(c) Explain volume resistivity, give ASTM D and derive its importance.	07
	(a) Explain the factors affecting flammability.	03
	(b) Derive luminous transmittance and haze briefly.	04
(c) What is LOI and give the standard of the same.	07	
OR		
Q.3	(a) What is Glass Transition temperature?	03
	(b) Give the full form of DSC, TGA, TMA and DMA.	04
	(c) Explain different attachments of DMA and explain its importance.	07
Q.4	(a) Give the name of the instrument used to analyze weight change with increase in temperature.	03
	(b) Explain the instrument use to measure T_m , T_g and enthalpy.	04
	(c) Explain oxygen index test with neat sketch.	07
OR		
Q.4	(a) What is chemical resistance?	03
	(b) Does UV radiation affect mechanical strength? How?	04
	(c) Explain the instrument use to measure weight change with increase in temperature.	07
Q.5	(a) What is the standard followed to measure ESCR?	03
	(b) Explain three dimension banding.	04
	(c) Explain flammability with neat sketch and standard.	07
OR		
Q.5	(a) What is solvent stress cracking resistance?	03
	(b) Explain importance of thermal analysis.	04
	(c) Draw the resulting graph of DSC having T_g , T_m and T_c .	07
