

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3172318**Date:01-12-2023****Subject Name: Plastics Product Design****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) Define Product Design. Explain factors affecting Product design.	03
	(b) List the advantages of Injection molding process related to product design.	04
	(c) List the various steps followed in preliminary product design.	07
Q.2	(a) List the best suitable material for the following properties: wear resistance, Notch sensitivity and Flame retardant	03
	(b) Define check list. Explain ideal check list for product design.	04
	(c) Which type of design rules have to be followed while designing wall thickness? Explain	07
	OR	
	(c) Explain about Ribs and Bosses	07
Q.3	(a) List the best suitable material for the following properties: Self extinguish, High strength to weight ratio and Permeability	03
	(b) Importance of material selection criteria while designing the product.	04
	(c) Explain about Short-term and Long term properties.	07
	OR	
Q.3	(a) Short Note : Parting Line	03
	(b) Short Note : Lettering and embossing	04
	(c) List and explain Process selection criteria while designing the product.	07
Q.4	(a) How will you analysis the comparative data of various properties of plastics materials for optimum material selection? Explain with suitable example.	03
	(b) Classify various Plastic Processing Techniques on basis of product contour.	04
	(c) Explain design procedure for Tooth Brush.	07
	OR	
Q.4	(a) List advantages of Compression molding.	03
	(b) Explain relation of materials and process with Product Design	04
	(c) Explain design procedure for Concentrated HCL storage Tank.	07
Q.5	(a) Explain: Reinforced Plastic give higher tolerance than unreinforced plastics.	03
	(b) Explain material selection criteria for designing Pump Impeller.	04
	(c) Explain design procedure for overhead storage tank of 20,000 Lit.	07
	OR	
Q.5	(a) Compare design procedure for Wrist Watch Gear with Machine Gear	03
	(b) State typical Product design features related to Blow Molding.	04
	(c) Explain design procedure for Kayak	07
