Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– I • EXAMINATION – WINTER 2014

Subject Code: 2712408 Date:06/01/ 2015

Subject Name: Plastics Mould & Product Design Simulations

Time:2:30 to 5:00 PM Total Marks: 70

Instructions:

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

Q.1	**(a)**	Classify injection moulding machines and explain in detail.	**07**
	(b)	Explain the product design guidelines for moulded holes and moulded threads.	**07**
Q.2	**(a)**	How to determine (i) shot weight (ii) injection pressure (iii) clamping force.	**07**
	(b)	Explain double ejection and delayed ejection.	**07**
		OR	
	(b)	How will you calculate the cooling time? Explain cooling through capillary tubes and heat rods.	**07**
Q.3	**(a)**	What is gate balancing? Explain the application of gates to various products and materials.	**07**
	(b)	Explain about moulding undercuts.	**07**
		OR	
Q.3	**(a)**	Discuss about surface defects of injection moulded products.	**07**
	(b)	What are the applications, advantages and disadvantages of compression and transfer moulding?	**07**
Q.4	**(a)**	Explain plunger transfer and screw transfer moulding techniques.	**07**
	(b)	Discuss about structural considerations in plastics product design.	**07**
		OR	
Q.4	**(a)**	How will you select material for plastics product?	**07**
	(b)	Write about machining and finishing of injection moulded parts.	**07**
Q.5	**(a)**	Explain various plastics product assembly methods.	**07**
	(b)	Write about insert moulding.	**07**
		OR	
Q.5	**(a)**	Explain the role of FEA in plastics product and mould design.	**07**
	(b)	Explain any one liquid based rapid prototyping process.	**07**

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