Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2022

Subject Code:3152309 Date:13-01-2023

Subject Name:Plastic Mold & Die 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)**	What is the basic difference between dies and mould?	**03**
	(b)	Explain in brief mould design.	**04**
	(c)	Discuss briefly on: i) Mould making material ii) What is spacer block iii) Angle lift split iv) Register Ring v) Split Cavity vi) Mould for Internal Undercut product vii) Form pin	**07**
Q.2	**(a)**	What is runner ejection technique?	**03**
	(b)	Explain split mould.	**04**
	(c)	Explain working principle of two-plate mould with its neat sketch.	**07**
		OR	
	(c)	Write short notes on molds for internal threaded components.	**07**
Q.3	**(a)**	Write down the limitation of two part mould design.	**03**
	(b)	Write down different rheological consideration of material during die design.	**04**
	(c)	Describe constructional details of three-plate mould with its neat sketch.	**07**
		OR	
Q.3	**(a)**	What are standard mould parts?	**03**
	(b)	Write short notes on molds for external threaded component and its ejection mechanism.	**04**
	(c)	Describe Cam Track Actuation System with suitable example of a product.	**07**
Q.4	**(a)**	Discuss Integer v/s. Insert type moulds.	**03**

	(b)	Write short notes on Design Criteria for extrusion die	**04**
	(c)	Explain Design of straight through dies with calculations.	**07**

OR

Q.4	**(a)**	What is Side core and side cavity?	**03**
	(b)	Explain the dies function used in extrusion process and its parts with neat sketch.	**04**
	(c)	Differentiate between two-plate mould and three-plate mould design with suitable sketch.	**07**
Q.5	**(a)**	What is mould cooling and how it is achieved?	**03**
	(b)	Explain mould temperature control system and advantages of Insert cooling over integer cooling system.	**04**
	(c)	Explain with neat sketch the Bubbler cooling mechanism.	**07**

OR

Q.5	**(a)**	What is ejector grid system in injection mould?	**03**
	(b)	Explain Annulus cooling system for Cavity Insert.	**04**
	(c)	Explain and differentiate between Axially Fixed Rotating Core and Axially Withdrawing Rotating Core Design for a mould of threaded component.	**07**

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