

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2024

Subject Code: 3152309

Date: 23-05-2024

Subject Name: Plastic Mold & Die Design

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) Differentiate between a Mould and Die with suitable example.	03
	(b) What are the criteria considered while controlling Mould Temperature for a problem free product?	04
	(c) Define Injection Mould. Explain the requirements of a mould?	07
Q.2	(a) What is integer and insert cooling? Explain with example.	03
	(b) Explain with sketch core insert cooling using Baffled system.	04
	(c) Why cooling is important in mould, what will be the effect when no cooling is given in the mould. Explain each point.	07
	<b>OR</b>	
	(c) Draw and explain the Annulus cooling for cavity insert for an injection mould.	07
Q.3	(a) What are the conditions adopted for unscrewing mechanism implementation in an injection mould.	03
	(b) Explain with sketch the Withdrawing Rotating Core Design.	04
	(c) Draw and explain the mechanism for automatic unscrewing with a concept of Machine Powered, Horizontal Rack – Pinion Design using Bevel Gear set.	07
	<b>OR</b>	
Q.3	(a) Explain the Ejection and Injection system used in a three plate mould design.	03
	(b) How the Runner Puller Pin useful in a three plate mould design? Explain with a neat sketch.	04
	(c) With suitable sketch differentiate between two plate and three plate injection mould design concept.	07
Q.4	(a) Explain the condition under which split cavity mould is recommended.	03
	(b) What are the Types of split cavity mechanism?	04
	(c) What is delay in split cavity mould? Explain with sketch in what condition it considered.	07
	<b>OR</b>	
Q.4	(a) What is the Power Drive System used in Automatic Unscrewing System.	03
	(b) What consideration made for Layout of impression for Automatic Unscrewing system in Injection mould?	04
	(c) Explain with neat sketch the working of Machine Powered , Archimedean Screw Design for Automatic Injection Mould	07

- Q.5** (a) What is Form Pin? Explain. **03**  
(b) Differentiate between a two plate and three plate mould design concept. **04**  
(c) Explain the working of Three Plate Mould Design with neat sketch **07**
- OR**
- Q.5** (a) Explain a product with sketch which needs an internal undercut mould design. **03**  
(b) What is the function of Runner Puller pin in a three plate mould design, explain with sketch. **04**  
(c) Explain with neat sketch the Extrusion Pipe Die Design and name its various parts. **07**

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