Seat No.:_____ Enrolment No._____



# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE- SEMESTER–VII (NEW) EXAMINATION – WINTER 2020**

**Subject Code:2173409 Date:28/01/2021**

**Subject Name:Plastic mold & Die design**

**Time:10:30 AM TO 12:30 PM Total Marks: 56**

**Instructions:**

1. **Attempt any FOUR questions out of EIGHT questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

| | | | MARKS |
|---|---|---|---|
| **Q.1** | **(a)** | What are the machines used for fabrication of molds. | **03** |
| | **(b)** | What are the design considerations and constraints for split mould? | **04** |
| | **(c)** | What are parts of Conventional Injection Mold and Suggest best materials to Manufacture them with neat sketch | **07** |
| **Q.2** | **(a)** | What is Honing Operation? | **03** |
| | **(b)** | What is Shrinkage and how it can be calculated? What is warpage? | **04** |
| | **(c)** | Explain the Working principle of EDM-wire cut machine with neat sketch | **07** |
| **Q.3** | **(a)** | What are the parts of Extruder screw and their functions | **03** |
| | **(b)** | For a 8 – cavity Mould explain the concept of Runner and Gate Balancing | **04** |
| | **(c)** | What is Transfer Molding? Explain the Design principles of Pot and Plunger transfer mold with appropriate sketches. | **07** |
| **Q.4** | **(a)** | What is Transfer Pot and Loading chamber? | **03** |
| | **(b)** | Explain the working principle of Form Pin. | **04** |
| | **(c)** | What is Extrusion? What are the die Design Goals of Extrusion Die and suggest the ways to accomplish the same. | **07** |
| **Q.5** | **(a)** | What is Gate? What are the factors that required selecting the optimum size of Gate? | **03** |
| | **(b)** | What is Bolster? Name the types of Bolsters available and what are the materials used for construction of bolsters. | **04** |
| | **(c)** | Explain the working Principle of Finger cam actuation mechanism with neat sketch and necessary calculations | **07** |
| **Q.6** | **(a)** | What is Runner efficiency and how it is calculated? | **03** |
| | **(b)** | What is Sprue? Write a short Note on Sprue Design and Its types with appropriate sketches | **04** |
| | **(c)** | What is Runner? How many Types of Runners were there with neat sketches? How runner size and layout is calculated? Suggest the best runner. | **07** |
| **Q.7** | **(a)** | Explain Transfer Molding Cycle with neat sketch. | **03** |
| | **(b)** | Explain Flash Type compression mold with neat sketch. | **04** |
| | **(c)** | Explain Different types of Gates with neat sketches? Explain how Auto-Degating can be achieved? | **07** |
| **Q.8** | **(a)** | What are the fundamentals to be considered in designing Transfer Molds? | **03** |
| | **(b)** | Explain how Integer Core and cavity cooling can be achieved with neat diagram. | **04** |
| | **(c)** | What is Parting surface? Explain How parting surfaces are classified. | **07** |

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