

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code:3152309

Date:05-12-2024

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.

- Q.1** (a) What is an injection mould? **03**
(b) What is the difference between a die and a mould? **04**
(c) Explain the working of two plate mould with neat sketch. **07**
- Q.2** (a) What are the selection criteria of mould material? **03**
(b) What are the main differences between two plate and three plate mould? **04**
(c) What is mould cooling and how it is achieved? **07**
- OR**
- (c) Explain briefly the parts of injection mould with a neat sketch. **07**
- Q.3** (a) Define: i) Daylight ii) Parting line iii) Shot capacity **03**
(b) Mention the different types of split mould actuation methods. **04**
(c) Explain the working of three plate mould with neat sketch. **07**
- OR**
- Q.3** (a) What are the conditions under which split cavity mould is recommended? **03**
(b) Write short notes on side cores. **04**
(c) Explain the working of dog-leg cam actuation method with a neat sketch. **07**
- Q.4** (a) List out various types of side core and side cavity. **03**
(b) Write the comparison between insert cooling and integer cooling system. **04**
(c) Write short notes on moulds for internal threaded components. **07**
- OR**
- Q.4** (a) Describe angled-lift splits. **03**
(b) How cooling insert plays a vital role in enhancing cooling efficiency and achieving better part quality. **04**
(c) What is delay in split cavity mould? Explain with sketch in what condition it is considered. **07**
- Q.5** (a) Define: i) Undercut ii) Form pin iii) Spacer block **03**
(b) Classify the dies according to the extrudate & direction of flow of melt. **04**
(c) Explain design of straight through dies with calculations. **07**
- OR**
- Q.5** (a) Write short notes on design criteria for extrusion dies. **03**
(b) Explain the die's function used in extrusion process and its parts with neat sketch. **04**
(c) Write down different rheological consideration of material during die design. **07**
