

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2182307/2182311****Date:17/05/2019****Subject Name:Advanced Plastic Mould 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.

		MARKS
Q.1	(a) What is clamping pressure and how clamping pressure is determined?	03
	(b) What are the factors that affect economical mould cooling?	04
	(c) A plastic component having 1. Shrinkage: 0.2-1.1% 2. Volume of component: 18.037 cm ³ 3. Density of material: 1.39 g/cm ³ 4. Weight of the component: 23.27 g 5. Number of cavities: Single cavity 6. Projected area of component: 101.28 cm ² 7. Injection pressure – 1000kg/cm ²	07
	• Material: PA 66 With 33% GF	
	Calculate	
	1. Shot capacity required? (swept volume of the injection cylinder = 67.9 cm ³)	
	2. Clamping tonnage required (Factor of safety = 1.3 & Cavity pressure is ½ of injection pressure)	
Q.2	(a) Write a short note on different types of cooling channels	03
	(b) Explain the concept of spring actuation system in split mould with appropriate diagram	04
	(c) Explain collapsible core with neat sketch	07
	OR	
	(c) Explain cam track actuation system with neat sketch	07
Q.3	(a) What are the types of gates and ejection systems can be incorporated in two plate moulds only	03
	(b) Name different types of ejection systems used in injection molding industry	04
	(c) Explain rotating core mechanism with neat sketch.	07
	OR	
Q.3	(a) What is the importance of tolerance in injection moulds?	03
	(b) What is shrinkage and explain how it can be compensated.	04
	(c) Explain dog-leg cam and its terminology with neat sketch	07
Q.4	(a) Explain heat pipe cooling with neat sketch	03
	(b) Explain stripper plate ejection system with neat sketch	04
	(c) Explain finger cam mechanism with its detailing with neat sketch	07
	OR	
Q.4	(a) Write a short note on undercuts.	03
	(b) What are the parameters requires for the selection of injection molding machine	04
	(c) Explain 2-plate injection mould and its details with neat sketch	07

- Q.5 (a) What is 1.side core 2. Back pressure 3.Register Ring 03
(b) How auto de-gating can be achieved. 04
(c) Explain the concept of axially fixed rotating core and withdrawing of rotating core. 07

OR

- Q.5 (a) What are advantages of CAD in Plastics mould design? 03
(b) Write C-Program for calculating short-Capacity 04
(c) Explain the working principle of angled pin lift splits 07

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