Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016

Date:18/11/2016

Subject Code:2172302

Subject Name: Plastics Mold & Die Design Time: 10.30 AM to 1.30 PM Instructions: Total Marks:			70
		Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Explain about the EDM process. What is the application of EDM machine in mould manufacturing?	07
	(b)	Write the function of: Lathe; Shaping machine; Drilling machine; Grinding machine; wire EDM; milling machine; honing machine.	07
Q.2	(a) (b)	How a CNC milling machine is useful in mould manufacturing? What are the different types of injection moulds? Explain about any one with the help of a sketch.	07 07
	(b)	OR Discuss the importance of Lathe and Shaping machines in a tool room	07
Q.3	(a)	Calculate the shot capacity of the injection moulding machine if a product of weight 20 gms is to be moulded in ABS and a 15 impression mould is desired. Assume: Bulk factor of $PS = 1.9$ Bulk factor of $PS = 1.8$ Specific gravity of $PS = 1.04$ Specific gravity of $PS = 1.04$	07
	(b)	Discuss advantages, disadvantages and applications of Pin Gate; Submarine Gate; Overlap gate; rectangular edge gate; tab gate; ring gate and diaphragm gate. OR	07
Q.3	(a) (b)	A product in HDPE weighing 50 gms is to be moulded on an injection moulding machine having shot capacity of 1000 gms. Work out how many impressions can be moulded on this machine. Assume bulk factor of HDPE = 1.8; Specific gravity of HDPE = 0.96. Bulk factor of PS= 1,4; sp.gr. of PS=1.04 Calculate the efficiency of full round, half round, trapezoidal and hexagonal runners.	07
Q.4	(a) (b)	Describe Semi-automatic, Semi positive compression mould with a sketch. What is gate in injection moulds? Explain about any two types of gates? OR	07 07
Q.4	(a) (b)	Write about the machining operations required for a rectangular plate of 200x150x50mm which has equidistant holes at every 20mm length and breadth. Discuss the difference between integer and insert bolster type of moulds and give applications.	07 07
Q.5	(a)	A rectangular box moulded in PP has dimensions of 185x125x40mm. Top open, this box has wall thickness of 2mm throughout. If a 2 impression mould is desired, do the feed system calculations	07

	(b)	Fill in the blanks:	0'
	` ′	a. Material of Ejector pin is	
		b. For tall and hollow products,Ejection system is used.	
		cis the disadvantage of a pin gate.	
		d. Material of construction of Insert is	
		e. Material of construction of a bolster is	
		f. Minimum diameter of a runner is	
		g. Material of ejector rod is	
		OR	
Q.5	(a)	Explain the extrusion die design procedure	0′
-	(b)	How to calculate transfer pot of transfer moulds?	0'
