Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2182311 **Date: 29/11/2018**

Subject Name: Advanced Plastic Mould 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.**

			MARKS
Q.1	**(a)**	Define : Ejection system ; Split moulds, Baffle	**03**
	(b)	Discuss Sleeve ejection with diagram	**04**
	(c)	Design a fully automatic injection mould for the product shown in fig[a]	**07**
Q.2	**(a)**	Discuss finger cam actuation with sketch	**03**
	(b)	Determine the pitch and the pitch circle diameter for the interconnecting groove design , given the following information: Diameter of insert : 35mm ; Gap between inlet and outlet grooves : 5mm ; number of impressions : 24 ; depth of groove : 5mm.	**04**
	(c)	Discuss various transmission systems for unscrewing moulds with sketches	**07**
		OR	
	(c)	Discuss cooling of deep cores with neat diagrams	**07**
Q.3	**(a)**	What is register ring? Discuss	**03**
	(b)	Discuss Heat Rods	**04**
	(c)	For the product shown in fig[a], draw a fully automatic injection machine mould. Use graph paper	**07**
		OR	
Q.3	**(a)**	What is the function of Lathe machine in a mould making shop ? Discuss	**03**
	(b)	Write a C Program for Shot Capacity	**04**
	(c)	Discuss stripper plate ejection in detail with diagrams	**07**
Q.4	**(a)**	Fill in the blanks: 1. Material of "O" ring is _____ 2. Function of locking heel is _____ 3. Undercut is defined as _____	**03**
	(b)	Write a C program for Plasticizing Capacity	**04**
	(c)	Discuss in detail about collapsible Cores	**07**
		OR	
Q.4	**(a)**	Draw cooling channel layouts for product shown in fig.[a]	**03**
	(b)	Discuss cooling of shallow inserts	**04**
	(c)	Discuss Core withdrawal system using Rack & Pinion	**07**
Q.5	**(a)**	What is a wear plate? Discuss	**03**
	(b)	Write a C program for cooling period of Cycle	**04**
	(c)	Discuss multilevel cooling for integer cavities	**07**

OR

Q.5 **(a)** What are water ways? **03**

(b) A product of weight 30 gms is to be moulded in PP in an injection moulding machine. If a 20 impression mould is desired, work out the shot capacity of the injection machine. Consider: Bulk factor of PS = 1.4
Bulk factor of PP = 1.9
Specific gravity of PS= 1.04
Specific gravity of PP = 0.9 **04**

(c) Discuss in detail about Heat Pipes **07**