GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VIII • EXAMINATION – SUMMER • 2015

Subject Code: 182301   **Date: 15/05/2015**

Subject Name: Plastic Mould and Die Design-II

Time:10.30am-01.00pm   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Design a suitable fully automatic machine mould for the product shown in fig.[a]	**07**
	(b)	For the mould designed for fig.[a]., draw a neat cooling layout for both core and cavity . Use graph paper	**07**
Q.2	**(a)**	Write a C program for the Shot Capacity.	**07**
	(b)	Discuss methods for actuation of Split moulds.	**07**

OR

	(b)	For the product shown in fig[b]., design a split mould using finger cam.	**07**
Q.3	**(a)**	Discuss about Heat Pipes in detail.	**07**
	(b)	Discuss cooling of Deep Core Inserts. Draw Sketches	**07**

OR

Q.3	**(a)**	Discuss about Collapsible Cores	**07**
	(b)	Write a C program for Cooling period of cycle.	**07**
Q.4	**(a)**	[1] Work out the pitch and pitch circle diameter for the interconnecting groove design , given that : diameter of insert =30mm , gap between inlet and outlet grooves = 3mm, number of impressions=12, depth of groove=3mm. [2] Discuss cooling of shallow inserts	**07**
	(b)	For the figure shown in fig.[c], design a runner layout for 20 impression mould. Show feed system calculations.	**07**

OR

Q.4	**(a)**	Discuss about cooling of Integer Cavities	**07**
	(b)	Discuss with sketches, rotating and withdrawing type of moulds for threaded products.	**07**
Q.5	**(a)**	For the product shown in fig[c], draw a suitable mould showing fully auto ejection system.	**07**
	(b)	Fill in the blanks:	**07**

       1. _____core cooling is used when height of product is much more than diameter.
       2. Dog leg cam is used for _____type of products
       3. For products in HDPE, if thread depth is upto to 2mm, _____ejection method is recommended.
       4. Heat Rods work on _____Principle..
       5. Function of wear plate is _____
       6. Material of split cavity is _____
       7. Function of Spider is _____

OR

Q.5	**(a)**	Discuss various designs of Extrusion Dies used for wire and cable Extrusion.	**07**
	(b)	Discuss die design for films.	**07**

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Fig (a)

HDPE

$\rho = 0.96\,g/cc$

2mm Wall thickness throughout

100

20

55

20

Fig (b)

Material: PP

$\rho = 0.9\,g/cc$

2mm Wall thickness throughout

45

20

50

Fig (c)

Material: Nylone

$\rho = 1.09\,g/cc$

3mm Wall thickness throughout

1mm Thread depth

30

20

30