Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER –VI • EXAMINATION – SUMMER- 2017

Subject Code: 3362301 Date:02-05-2017

Subject Name: DESIGN FOR BLOW AND THERMOFORMING MOULDS

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. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of only simple calculator is permitted in Mathematics.**
6. **English version is authentic.**

Q.1		Answer any seven out of ten.	**14**
	1.	State prototype mold materials for blow mold.	
	2.	Define blow ratio and swell ratio.	
	3.	Define shrinkage. State effect of mold temperature on shrinkage.	
	4.	List gases use for internal cooling of blow mold.	
	5.	State functions of striker plate in blow mold.	
	6.	State any two flash removal methods.	
	7.	State functions of core rod in injection blow mold.	
	8.	List various thermoforming mold materials.	
	9.	Which part of blow mold require higher cooling rate? why?	
	10.	What is draft angle in thermoforming mold? why female mold require low draft angle than male mold?	
Q.2	(a)	State properties require for blow mold materials.	**03**
		OR	
	(a)	State properties of beryllium copper as blow mold material.	**03**
	(b)	Explain constructional details of parison mold.	**07**
		OR	
	(b)	Define venting. Draw and explain various blow mold venting methods.	**07**
	(c)	Explain how blow mold clamping force is calculated.	**04**
		OR	
	(c)	Explain design considerations for blow mold parting line.	**04**
Q.3	(a)	Explain welding edges and flash pockets in blow mold designs.	**07**
		OR	
	(a)	Explain various blow mold cleaning methods.	**07**
	(b)	State types of internal cooling methods of blow mold.	**03**
		OR	
	(b)	Explain use of alignment pins in blow mold.	**03**
	(c)	List various blow mold ejection methods and explain any one.	**04**
		OR	
	(c)	Sketch any one cooling method for blow mold.	**04**
Q.4	(a)	Calculate number of impressions which can be accommodated in female vacuum forming mold for cup shaped product having top diameter 60 mm, bottom diameter 50 mm and height 40 mm. The sheet thickness is 1 mm and size of the sheet is 300 mm X 300 mm.	**07**
		OR	
	(a)	State significance of vent holes. With respect to vent holes explain:	**07**

-vent hole diameter and
- vent hole position

(b) Draw sectional elevation and plan of thermoforming mold for product mentioned in Q.4 (a). **07**

Q.5 (a) Explain various sheet clamping mechanisms in thermoforming mold. **04**

(b) Write short note on plug assist thermoforming mold. **04**

(c) State requirements of thermoforming mold materials. **03**

(d) Define draw ratio and state its significance. **03**

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