Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA ENGINEERING – SEMESTER – VI• EXAMINATION – SUMMER 2016

Subject Code: 3362301 Date: 07 /05 /2016

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.	List any four blow mold materials.	
	2.	Give any two differences between Injection Blow Molding and Extrusion Blow Molding.	
	3.	Define welding edge and flash pocket.	
	4.	Define blow ratio and swell ratio.	
	5.	State the use of striker plate in blow mold.	
	6.	Name any four prototype mold materials for thermoforming.	
	7.	Define draft angle. State its importance in mold design.	
	8.	What is draw ratio? State its importance.	
	9.	State any two mold release agents.	
	10.	State any two plug material.	
Q.2	(a)	State mold material selection requirements for blow mold.	**03**
		OR	
	(a)	Explain characteristics of aluminum as blow mold materials.	**03**
	(b)	Draw sectional elevation of blow mold for any product.	**07**
		OR	
	(b)	Define venting. Explain various venting methods in blow mold with neat sketches.	**07**
	(c)	Explain design considerations for blow mold parting line.	**04**
		OR	
	(c)	Sketch parison stick and label different parts.	**04**
Q.3	(a)	Explain importance of pinch-off in blow mold.	**03**
		OR	
	(a)	State various flash removal methods in blow mold.	**03**
	(b)	State importance of cooling. Sketch any two methods of blow mold cooling.	**07**
		OR	
	(b)	State and explain various ancillary elements of blow mold.	**07**
	(c)	Explain the use of alignment pins.	**04**
		OR	
	(c)	Explain any one ejection method of blow mold with neat sketch.	**04**
Q.4	(a)	Explain effect of shrinkage on draft angle in thermoforming mold.	**03**
		OR	
	(a)	Sketch any two type of plug shapes.	**03**
	(b)	Explain any one ejection technique for thermoformed products.	**04**

OR

(b) Explain different sheet clamping mechanisms in thermoforming. **04**

(c) What are requirements for thermoforming mold materials? Explain materials for production tooling. **07**

Q.5 (a) Explain the design criteria for vacuum holes. **04**

(b) Draw sectional elevation and plan of multi-impression thermoforming mold for product having 50 mm top diameter, 40 mm bottom diameter and height 40 mm. The size of the sheet is 300 mm X 300 mm and sheet thickness 1mm. **10**

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