Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**DIPLOMA ENGINEERING – SEMESTER – IV-EXAMINATION – WINTER 2015**

**Subject Code: 3342301** **Date: 17/12/2015**

**Subject Name: BLOW ROTATIONAL AND THERMOFORMING PROCESS**

**Time: 02:30 PM TO 5:00 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. | Give any four applications of blow molding process. | |
| | 2. | State the physical form of material for blow, rotational and thermoforming process. | |
| | 3. | State various materials use for thermoforming process. | |
| | 4. | Define pressure forming and vacuum forming. | |
| | 5. | State any four process variables for thermoforming. | |
| | 6. | State various mandrel inflation methods. | |
| | 7. | State any two disadvantages of blow molding. | |
| | 8. | State molding material requirements for rotational molding. | |
| | 9. | State any four applications of thermoforming process. | |
| | 10. | Give applications of rotational molding process. | |
| **Q.2** | (a) | State advantages of injection blow molding process. | **03** |
| | | OR | |
| | (a) | State any three advantages of extrusion blow molding process. | **03** |
| | (b) | State various requirements for an extruder in blow molding. | **03** |
| | | OR | |
| | (b) | Explain any two blow molding process defect and state remedies for it. | **03** |
| | (c) | Compare injection blow and extrusion blow molding process. | **04** |
| | | OR | |
| | (c) | Explain the material selection criteria for blow molding. | **04** |
| | (d) | Draw line diagram of blow molding machine and label different parts. | **04** |
| | | OR | |
| | (d) | Explain in brief about parison programming. | **04** |
| **Q.3** | (a) | State cooling methods of rotational molds. | **03** |
| | | OR | |
| | (a) | State any three advantages of rotational molding. | **03** |
| | (b) | Write rotational molding process steps. | **03** |

OR

| | | | |
|---|---|---|---|
| | (b) | State various rotational mold materials. | **03** |
| | (c) | State and explain any two heating methods of rotational molding. | **04** |

OR

| | | | |
|---|---|---|---|
| | (c) | Draw line diagram of rotational machine and label different parts. | **04** |
| | (d) | Explain characteristics of clamshell type rotational molding machine. | **04** |

OR

| | | | |
|---|---|---|---|
| | (d) | State types of rotational molding materials. | **04** |
| **Q.4** | (a) | Explain various heating methods for thermoforming. | **03** |

OR

| | | | |
|---|---|---|---|
| | (a) | State types of thermoforming machines. | **03** |
| | (b) | State and explain various stages of thermoforming process. | **04** |

OR

| | | | |
|---|---|---|---|
| | (b) | Compare thermoforming and blow molding process. | **04** |
| | (c) | State various thermoforming methods and explain any one with neat sketch. | **07** |
| **Q.5** | (a) | Explain any two post blow molding operations. | **04** |
| | (b) | Explain any two process variables for blow molding. | **04** |
| | (c) | State applications of needle inflation method. | **03** |
| | (d) | How accumulator is helpful for blow molding process? | **03** |

**********