

GUJARAT TECHNOLOGICAL UNIVERSITY**ME - SEMESTER- I • EXAMINATION – WINTER 2014****Subject Code: 2712408****Date: 06/01/ 2015****Subject Name: Plastics Mould & Product Design Simulations****Time: 2:30 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.

- Q.1** (a) Classify injection moulding machines and explain in detail. 07
(b) Explain the product design guidelines for moulded holes and moulded threads. 07
- Q.2** (a) How to determine (i) shot weight (ii) injection pressure (iii) clamping force. 07
(b) Explain double ejection and delayed ejection. 07
- OR**
- (b) How will you calculate the cooling time? Explain cooling through capillary tubes and heat rods. 07
- Q.3** (a) What is gate balancing? Explain the application of gates to various products and materials. 07
(b) Explain about moulding undercuts. 07
- OR**
- Q.3** (a) Discuss about surface defects of injection moulded products. 07
(b) What are the applications, advantages and disadvantages of compression and transfer moulding? 07
- Q.4** (a) Explain plunger transfer and screw transfer moulding techniques. 07
(b) Discuss about structural considerations in plastics product design. 07
- OR**
- Q.4** (a) How will you select material for plastics product? 07
(b) Write about machining and finishing of injection moulded parts. 07
- Q.5** (a) Explain various plastics product assembly methods. 07
(b) Write about insert moulding. 07
- OR**
- Q.5** (a) Explain the role of FEA in plastics product and mould design. 07
(b) Explain any one liquid based rapid prototyping process. 07
