

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018**

**Subject Code: 2182308**

**Date: 30/04/2018**

**Subject Name: Plastic Product Design**

**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.

	<b>MARKS</b>
<b>Q.1</b> (a) What is product design? What is the importance of product design.	<b>03</b>
(b) Explain the preliminary design considerations for product design.	<b>04</b>
(c) Explain wall thickness design considerations while designing the product.	<b>07</b>
<b>Q.2</b> (a) What are undercuts? What care should be taken while designing undercuts?	<b>03</b>
(b) List the short term and long term properties for designing a plastic product.	<b>04</b>
(c) Explain the product design process for designing an overhead water storage tank.	<b>07</b>
<b>OR</b>	
(c) What is the importance of taper or draft in product design?	<b>07</b>
<b>Q.3</b> (a) Compare rotational molding with blow molding process.	<b>03</b>
(b) Explain the importance of designing radii and fillets in a product.	<b>04</b>
(c) List the steps in product design.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) Justify the material and method used to manufacture a chemical storage tank.	<b>03</b>
(b) Explain product design checklist.	<b>04</b>
(c) What is the importance of ribs and bosses? What are the design considerations to be taken while designing ribs and bosses?	<b>07</b>
<b>Q.4</b> (a) Explain briefly the process to manufacture thermoset dinnerware.	<b>03</b>
(b) Which is the process suitable for producing plastic disposable cups? Justify.	<b>04</b>
(c) Explain molded holes in product design.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) List any two materials with their properties which are used to make pipes for water supply.	<b>03</b>
(b) What care should be taken while selecting a material for making insulated wires for electrical applications?	<b>04</b>
(c) Explain the product design process for designing a wrist watch gear.	<b>07</b>
<b>Q.5</b> (a) What is the importance of decorating a part in part design?	<b>03</b>

- (b) Explain the selection of material for designing a contact lens. **04**
- (c) Explain the process steps for designing plastic chair. **07**

**OR**

- Q.5**
- (a) Write a short note on threads in molded plastic parts. **03**
  - (b) What is the importance of metal inserts in plastic part? Explain briefly types of inserts and insert orientation. **04**
  - (c) Explain the process steps for designing any plastic product with hinge. **07**

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