

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018****Subject Code: 2183408****Date: 07/05/2018****Subject Name: Product Design & Development****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.

|     |     |   | MARKS |
|-----|-----|---|-------|
| Q.1 | (a) | Explain the types of design                                   | 03    |
|     | (b) | Explain the design product process                            | 04    |
|     | (c) | Definition of Market segmentation and Planning for products   | 07    |
| Q.2 | (a) | Explain the Ergonomics  | 03    |
|     | (b) | Write down the short note on Identification of customer needs | 04    |
|     | (c) | write short note on Human Factors consideration in design     | 07    |
| OR  |     |   |       |
| Q.3 | (c) | Write down the steps for Establishing markets                 | 07    |
|     | (a) | Write the material Selection Process                          | 03    |
|     | (b) | Explain the Design for Assembly                               | 04    |
| Q.3 | (c) | Explain the Design for Manufacture                            | 07    |
| OR  |     |   |       |
| Q.3 | (a) | Define the Residual Stresses, Fatigue, Fracture and Failure   | 03    |
|     | (b) | write a short note on Value Analysis                          | 04    |
|     | (c) | Explain the Design for Casting                                | 07    |
| Q.4 | (a) | Explain systematic methods for designing                      | 03    |
|     | (b) | Explain the Generating design concepts                        | 04    |
|     | (c) | Explain Creative thinking techniques                          | 07    |
| OR  |     |   |       |
| Q.4 | (a) | Explain morphological methods                                 | 03    |
|     | (b) | Explain concept evaluation methods.                           | 04    |
|     | (c) | Explain systematic methods for designing                      | 07    |
| Q.5 | (a) | Explain the classification of the Manufacturing Process       | 03    |
|     | (b) | Explain activity based costing                                | 04    |
|     | (c) | Explain human factors design                                  | 07    |
| OR  |     |   |       |
| Q.5 | (a) | Briefly explain the steps of ball pen design                  | 03    |
|     | (b) | Explain design for environment                                | 04    |
|     | (c) | Explain Creative thinking techniques                          | 07    |

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