

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER – II • EXAMINATION – SUMMER 2017

Subject Code: 1722803**Date: 11/05/2017****Subject Name: Product Design for Manufacturing****Time: 10:30 A.M. to 01:00 P.M.****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) Explain the material selection criteria for gear used in lathe machine. **07**
 (b) Discuss the process of material selection for flywheel. **07**
- Q.2** (a) Explain the influence of tooling on the design of cast product. **07**
 (b) Explain various stages in the product design process. **07**
- OR**
- (b) Explain gear finishing and gear coating using different material. **07**
- Q.3** (a) How to evaluate parametric design for manufacturability? **07**
 (b) Define DFM and DFMA. Explain the design for sheet metal forming process. **07**
- OR**
- Q.3** (a) How does surface modification in materials help in improving the life of a product and justify it. **07**
 (b) Explain the product design procedure for high speed automatic assembly. **07**
- Q.4** (a) Discuss various automated systems in applying the principle of ergonomic. **07**
 (b) Explain the expert system for ergonomic consideration. **07**
- OR**
- Q.4** (a) Discuss the application of anthropomorphic data in ergonomic design. **07**
 (b) Explain the various contemporary issues facing now a days in product design in casting industries with essential casting product case study. **07**
- Q.5** (a) Explain the product design for robot application in automobile assembly line. **07**
 (b) Explain the design consideration for robust product design and development. **07**
- OR**
- Q.5** (a) What is an aesthetic product design? Explain the concept of expression and style. **07**
 (b) How a car manufacturing industries advantages to implementing aesthetic model and interpretation of the model by a car designer? **07**