

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER • 2013****Subject code: 1722803****Date: 31-12-2013****Subject Name: Product Design For Manufacturing****Time: 10.30 am – 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.
4. Symbols and notations carry usual meaning.

- Q.1** (a) Explain the material selection criteria for gear used for machining application. **07**
(b) Explain parametric design for manufacturability of power screw. **07**
- Q.2** (a) Discuss various stages of product design. **07**
(b) Explain the influence of tooling on the design of cast product. **07**
- OR**
- (b) Discuss the manufacturing process of lathe bed in view its functional requirement. **07**
- Q.3** (a) Explain the influence of process on the design of components made by joining process with an example. **07**
(b) How does surface modification in materials help in improving the life of a product. **07**
- OR**
- Q.3** (a) Quoting an example discuss any recent development in forming process. **07**
(b) Explain the product design procedure for high speed automatic assembly. **07**
- Q.4** (a) What is anthropomorphy? Discuss its significance in product manufacturing. **07**
(b) Discuss various automated systems in applying the principles of ergonomics. **07**
- OR**
- Q.4** (a) What is meant by concept of order with variety? **07**
(b) Explain the process of selection of plastics in kitchenware articles. **07**
- Q.5** (a) Discuss generating conceptual alternatives from manufacturing point of view in product design. **07**
(b) How do composites play a role in manufacturing of cutting tool used in machining? **07**
- OR**
- Q.5** (a) Explain the influence of tooling on the design of cast product. **07**
(b) Discuss sheet metal design for manufacturing car body. **07**
