

GUJARAT TECHNOLOGICAL UNIVERSITY
ME SEMESTER II EXAMINATION – SUMMER 2017

Subject Code: 2720816**Date: 30/05/2017****Subject Name: Design for manufacturing and assembly****Time: 02:30 PM to 05:00 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) What is meant by tolerance? How many types of tolerance is there? What are the types of fit? Describe the differences. **07**
- (b) How weight influences form design? State the factors associated with it. **07**
- Q.2** (a) How should one choose material? Write principal materials used to design mechanical components. **07**
- (b) Mention different design aspects in forging and sheet metal components. **07**
- OR**
- (b) Write steps for design for an assembly process? **07**
- Q.3** (a) Write general point regarding form design. How mechanical loading influence form design? **07**
- (b) What are various component design and machining considerations? **07**
- OR**
- Q.3** (a) Write tools to redesign a product to improve its environmental impact. Explain design for recyclability. **07**
- (b) Enlist principles of lean manufacturing. What is DFA index? **07**
- Q.4** (a) Write for design for manual assembly. **07**
- (b) What is poka yoke? Mention Seven steps to be followed for Poka Yoke attainment. **07**
- OR**
- Q.4** (a) Write three DFMA criteria for retaining components for redesign of a product. **07**
- (b) Which are various factors for designing the welded structure? **07**
- Q.5** (a) Write for design for an automatic assembly. **07**
- (b) What is concurrent engineering? Differentiate between traditional design and manufacture Vs concurrent engineering. **07**
- OR**
- Q.5** (a) What are the environmental objectives? List global issues, regional and local issues in this regard. **07**
- (b) How one can design to minimize material usage? What should be taken care for design for disassembly. **07**
