

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII(OLD) • EXAMINATION – WINTER 2016

Subject Code: 171904**Date: 25/11/2016****Subject Name: Product Design and Value Engineering****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.

- Q.1** (a) Explain the importance of product planning. Explain product planning process in detail. **07**
- (b) List and explain the characteristics of successful product development. **07**
- Q.2** (a) Distinguish Product Development Cycle and Product Life Cycle. **07**
- (b) What is Engineering Design? Explain the steps of design process. **07**
- OR**
- (b) Differentiate target specification and final specification of product. **07**
- Q.3** (a) Explain the role of value engineering team during product development in detail. **07**
- (b) You are appointed as a senior Product development engineer in a multinational Air conditioner manufacturing company. It is required to develop a new improved model of AC. How will you attempt the work assign to you successfully? While developing the model which parameters you will consider. **07**
- OR**
- Q.3** (a) Define product and explain the classification of product giving suitable examples. State the different ways for cost reduction for different products. **07**
- (b) Explain the following in connection with design for manufacturing:- **07**
1. Reduction of cost of components,
 2. Reduction of cost of assembly
- Q.4** (a) Explain the different phases of value engineering job plan in brief. **07**
- (b) Explain the value standards. **07**
- OR**
- Q.4** (a) Explain FAST diagram procedure and its importance. **07**
- (b) Explain the project selection and methods selection with reference to selection of evaluation of value engineering projects? **07**
- Q.5** (a) Explain the importance of materials selection in product design giving suitable examples. **07**
- (b) Explain the designing for rigidity with neat sketches in detail. **07**
- OR**
- Q.5** (a) What is cost? Explain the procedure for Calculating the Life Cycle Cost. **07**
- (b) Explain the importance of thermal properties of plastics in mechanical design. **07**
