

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (OLD) EXAMINATION – WINTER 2018****Subject Code: 171904****Date: 29/11/2018****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 main characteristics of successful product design. **07**
(b) Discuss Product life cycle analysis. **07**
- Q.2** (a) What is the importance of product specifications? How the final specifications are decided? Explain this **07**
(b) Discuss how the customer's needs are interpreted during product development process. **07**
- OR**
- (b) Discuss duration and cost of product development. **07**
- Q.3** (a) Explain the designing for stiffness and rigidity with reference to machines and machine tools under the criteria of Product design and development. **07**
(b) You are selected as Product design and development engineer in multinational mobile manufacturing company. To develop a new model of mobile is a work assign to you. How will you attempt this task? While developing the model which parameters you will consider. **07**
- OR**
- Q.3** (a) What is meant by design for production? Discuss with the help of illustration **07**
(b) You are appointed as a senior engineer (Product design) in a multinational Printer company. It is required to develop a new improved model of Printer. How will you carry out the work assign to you? Explain this. **07**
- Q.4** (a) What is FAST diagram? Discuss points to be considered for construction of FAST diagram. **07**
(b) What is cost? Explain the procedure for Calculating the Life Cycle Cost. **07**
- OR**
- Q.4** (a) Explain the different phases of value engineering job plan in brief. **07**
(b) Explain the relationship between product development and Value engineering. Also explain the advantages of value engineering. **07**
- Q.5** (a) Discuss value engineering training plan. **07**
(b) You are appointed as a senior Value Engineer in a multinational washing machine manufacturing company. It is required to cut down cost for a new improved model of washing machine. What are the factors you consider to attempt the work assign to you successfully? **07**
- OR**
- Q.5** (a) Discuss considerations of Human Aspects in Value Engineering **07**
(b) Bowl of multistage submersible pump is manufactured by casting process. Suggest the suitable material and alternative manufacturing process to reduce air pollution and cost and improve the quality of the product. **07**