

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018****Subject Code:2161502****Date:01/05/2018****Subject Name:Product Development & 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) What is product design? **03**  
(b) Discuss good product design characteristics. **04**  
(c) Explain product design process. **07**
- Q.2** (a) What is product development? **03**  
(b) Give product classification with example. **04**  
(c) How will you select material for a product? Explain. **07**
- OR**
- (c) Explain role of market research in product design. **07**
- Q.3** (a) What is process design? **03**  
(b) Write note: new materials in product design **04**  
(c) Discuss principles of ergonomics in product design process. **07**
- OR**
- Q.3** (a) What is feasibility study? **03**  
(b) Write note: standardization in product design. **04**  
(c) What are objectives of human engineering? **07**
- Q.4** (a) What is value engineering? **03**  
(b) Write note: process selection criteria **04**  
(c) Discuss importance of value engineering in industry. **07**
- OR**
- Q.4** (a) How is cost reduction technique? **03**  
(b) Write note: role of creativity in VE. **04**  
(c) Discuss various phases of VE. **07**
- Q.5** (a) What are the limitations of VE? **03**  
(b) What is a job plan? Explain. **04**  
(c) Explain various values used in VE with examples. **07**
- OR**
- Q.5** (a) Why product design and VE work simultaneously? **03**  
(b) Write note: FAST diagram. **04**  
(c) Explain primary and secondary functions of (1) cell phone, (2) water cooler in VE term. **07**