

**B.Tech. - VIEP - MECHANICAL ENGINEERING
(BTMEVI)**

00263

**Term-End Examination
December, 2016**

BIMEE-002 : PRODUCT DEVELOPMENT AND DESIGN

Time : 3 hours

Maximum Marks : 70

Note :

- (i) Answer any five questions.*
 - (ii) All questions carry equal marks.*
 - (iii) Standard terms have usual meaning.*
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- 1. (a) Briefly discuss the need of product design and development with example. 7
- (b) Discuss stage-gate process of product development. 7
- 2. (a) How are the customer needs classified ? List down different ways to gather customer needs. Explain any one of them. 7
- (b) Briefly describe a systematic process for function analysis and modelling. 7

3. (a) Explain the role of technology forecasting in developing a new product. 7
- (b) Elaborate the "Use of standards in product design". 7
4. (a) What are the different types of costs associated with break-even analysis ? Explain how break-even analysis is carried out. 7
- (b) Describe the process of decision-making in product development using the concept of Utility Index. 7
5. (a) What is reliability ? What factors are to be considered in product design with regards to product reliability ? 7
- (b) Explain man-machine interface with the help of suitable examples. 7
6. (a) What is anthropometry ? Explain the importance of anthropometric data in product design. 7
- (b) List down the steps involved in the design of displays and controls. Explain how displays and controls are made compatible. 7

7. (a) What do you mean by work study ? Explain its procedures and objectives. 7
- (b) Explain the techniques that improve the method of product design and also the quality of products. 7
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