

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

00226

Term-End Examination

June, 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.*
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- 1. (a) What are the different phases of product design ? Explain them briefly. 7
- (b) Differentiate between need-based developments and technology-based developments. 7
- 2. (a) Briefly describe the ideation techniques with suitable examples. 7
- (b) Define the design of evaluation with a suitable example. 7

3. (a) Describe the process of decision-making in product development using the concept of Utility Index. 7
- (b) What is anthropometry ? Explain the importance of anthropometric data in design process. 7
4. (a) Enumerate and briefly explain the different considerations in product design with emphasis on reliability and economic feasibility. 7
- (b) Elaborate on the significance of use of standards in product design. 7
5. (a) Briefly discuss brain-storming and its advantages with suitable examples. 7
- (b) Explain with the help of suitable examples, how the product is appraised. 7
6. (a) Briefly explain the objectives that a designer has to fix up in design synthesis. 7
- (b) What do you mean by work study ? Explain its procedure and objectives. 7

7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$

- (a) Failure Mode and Effective Analysis
 - (b) Ergonomics
 - (c) Statistical Quality Control (SQC)
 - (d) Man-Machine Interface
 - (e) Technological Forecasting
 - (f) Innovation vs Invention
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