

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

**Term-End Examination  
June, 2013**

**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) | Describe role of reverse engineering in the process of product development.                                 | 7 |
|    | (b) | List all the basic tools of product development planning. Explain any one in detail.                        | 7 |
| 2. | (a) | Explain the role of technology forecasting in developing a new product.                                     | 7 |
|    | (b) | Compare and contrast the "Interview data method" and "Questionnaire method" of determining need importance. | 7 |
| 3. | (a) | Briefly describe "Function analysis system technique."  | 7 |
|    | (b) | How are component redundancies analysed and what is the significance of this analysis ? Describe briefly.   | 7 |

4. What is bench marking ? Elaborate on the significance of bench marking in product development with the help of a suitable example. **14**
  5. Explain life cycle assessment and describe its role in environment impact analysis. **14**
  6. Consider a “fingernail clipper” as a product and create a simplified function structure. Subsequently, from the function structure its morphological matrices. **14**
  7. Discuss in brief (*any four* of the following) : **14**
    - (a) Brain storming
    - (b) Role of ergonomics in product design and development.
    - (c) Design for environment
    - (d) Theory of inventive problem solving
    - (e) Manufacturing cost analysis.
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