

GANPAT UNIVERSITY

B. Tech. Semester: VIIth (Mechanical) Engineering

CBCS Regular Examination November – December 2014

(2ME705/1) PRODUCT DESIGN

Time: 3 Hours

Total Marks: 70

- Instruction:**
- 1 All questions are compulsory.
 - 2 Figure right to the questions indicate full marks.
 - 3 Use pencil to draw figures and give proper notations.
 - 4 Give answers to the point.

Section - I

- Que. – 1**
- (a) Discuss safety in product design & maintenance . [06]
- (b) Explain basic considerations in new product design. [06]

OR

- Que. – 1**
- (a) What is design for manufacture (DFM)? Explain it in details. [06]
- (b) Discuss steps involved in product planning process. [06]

- Que. – 2**
- (a) Explain the role Product Future Value & Cost. [06]
- (b) What do you mean by Consumer Value in product design? [05]

OR

- Que. – 2**
- (a) What are the elements of product design ? explain them. [06]
- (b) Explain different modern approach in product design. [05]

- Que. – 3**
- (a) Explain the importance of materials selection in product design giving suitable examples. [06]
- (b) Discuss the role of ergonomics in design and development of new product. [06]

Section – II

- Que. – 4**
- (a) Give detail classification of the rapid prototyping processes? Also explain how rapid prototyping processes are differ from conventional machining processes? [04]
- (b) Explain the basic forms of aesthetic design of any product with neat sketches. [04]
- (c) Enlist the various devices and technologies for virtual reality and explain any one in detail. [04]

OR

- Que. – 4**
- (a) Explain with the help of neat sketch Stereolithography Apparatus (SLA) techniques. Also state the various materials used in this process. [04]

- (b) Explain different phases of industrial design process. [04]
(c) Discuss the product design analysis on the basis of Functional, Aesthetic, Production design and design of Packaging. [04]

- Que. – 5 (a) You are appointed as a senior Product development engineer in a multinational washing machine manufacturing company. It is required to develop a new improved model of washing machine. [07]
(b) Distinguish Product Development Cycle and Product Life Cycle. [04]

OR

- Que. – 5 (a) You are appointed as a senior engineer (Product design) in a multinational Laptop company. It is required to develop a new improved model of laptop. How will you carry out the work assign to you? Explain this. [07]
(b) State and explain the objectives of product design and development. [04]

- Que. – 6 Attempt any three. [12]
(a) Discuss the successful product development.
(b) Write a short note on 3D printing techniques with the help of neat sketch.
(c) Explain with the help of neat sketch Selective Laser Sintering (SLS) techniques. Also state the various materials used in this process.
(d) Explain clearly – product development and product design.

END OF PAPER

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