

Roll No.

231115

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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

COMMON TO PRODUCTION, MECHANICAL AND MANUFACTURING ENGG.

II Semester

ME8251 - DESIGN CONCEPTS IN ENGINEERING

(Regulation 2012)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What are the types of design?
2. What are the requirements of good design?
3. Differentiate between design method and scientific design.
4. Enumerate the type of prototypes.
5. What is the weakness of TRIZ?
6. Differentiate between creativity and invention.
7. Define presentation aspects.
8. What do you understand by the team aspects?
9. How to select a material for an engineering application while designing a new product.
10. Give some examples for design for manufacturability.

Part – B (5 x 16 = 80 marks)

11. Write short note on the following with neat sketches and necessary examples
 - a. Static and dynamic products
 - b. Concurrent engineering
 - c. Sequential engineering
 - d. Benchmarking
 12. a) Explain the house of quality and steps for building house of quality.

OR

 - b) (i) What are the methods by which the customer's needs are identified? (6)
 - (ii) What are the eight basic dimensions of quality? (6)
 - (iii) Explain Kano Diagram. (4)
 13. a) (i) Differentiate between lateral and vertical thinking. (4)
 - (ii) What are the barriers of creative thinking? (12)
- OR**
- b) Write short note on the following creative thinking methods
 - a. Brainstorming
 - b. Concept map
 - c. Force fitting
 - d. Synectics

14. a) (i) Discuss human factor in design and ergonomics. (8)
(ii) Write short note on the following (8)
a. User friendly design
b. Aesthetics

OR

- b) Write short note on the following
a. Visual Aspects
b. Environmental Aspects
c. Marketing Aspects
d. Legal Aspects

15. a) (i) Explain the following performance characteristics of material. (8)
a. Classification of materials
b. Properties of materials
(ii) Write short note on recycling and material selection. (8)

OR

- b) Briefly discuss design for manufacturability and design for assembly.