

17/10/12,

Roll No.

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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

MECHANICAL ENGINEERING

Second Semester

ME 9151 CONCEPTS OF ENGINEERING DESIGN

(Regulation 2008)

(Common to Mechanical and Material Science)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART – A (10 x 2 = 20 Marks)

1. List down the four C's of design.
2. What are the advantages of computer aided design?
3. Name the 2 national and 2 international societies of engineers.
4. State the principle of prototyping.
5. Differentiate vertical thinking and lateral thinking.
6. What are the types of mental blocks?
7. What are the ways in which a human can interact with a product?
8. Define the term 'ergonomics' and bring out its importance in the design.
9. What are the important tips for presentation of slides?
10. What are steps involved while writing the technical report?

PART – B (5 x 16 = 80 Marks)

11. Sketch a block diagram to explain the morphology of design and elaborate the activities in each of its phase.
- 12.a) (i) What are the public sources and the private sources of information for engineering design? (10)
(ii) Differentiate the scientific method and Design method. (6)
- (OR)
- 12.b) (i) Bring out the need for the prototype modeling and simulation in engineering design. (8)
(ii) Explain any four types of customer requirements. (8)
- 13.a) (i) Explain the positive steps that you can take to enhance your creative thinking (6)
(ii) Explain the different types of mental blocks. (10)

(OR)

13.b) Write short notes on

- (i) Inventive problem solving (TRIZ) (6)
- (ii) Brainstorming (5)
- (iii) Force fitting methods (5)

- 14.a) (i) Explain the four kinds of inter-actions between human and products. (8)
(ii) Explain the important strategies of design for environment. (8)

(OR)

14.b) Explain the guidelines, with neat sketch, the design for manufacturing.

15.a) Explain the mechanics of writing technical report

(OR)

15.b) Explain in detail the preparation of oral presentations and the types of visual aids.