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Question Paper Code :

ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)
M.E/M.Tech I-Semester Regular Examinations, November 2015
DESIGN ENGINEERING
(MACHINE DESIGN)

Date:

Time: 3 hours

Max Marks: 60

Answer ONE Question from each Unit
All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT-I

1. (a) Distinguish between shigley model and Asimov model. (6)

(b) Explain need analysis of a product giving suitable examples (6)

OR

2. (a) What is the role of creativity in design? Explain with a suitable example. (6)

(b) Explain the parameters in material selection. (6)

UNIT-II

3. What are the design considerations in casting? (12)

OR

4. Explain the design factors for ceramic part. (12)

UNIT-III

5. (a) Explain Coulomb-Mohr's theory of failure for brittle material. (6)

(b) Explain low-cycle fatigue and High-cycle fatigue. Establish the characteristics equation for the S-N curve. (6)

OR

6. (a) What are the design steps for fluctuating stresses? (8)

(b) Explain the phenomenon of fatigue failure. (5)

UNIT-IV

7. Enumerate the precaution that a designer can take to minimize the chances of surface Failure. (12)

OR

8. Explain corrosion wear and surface fatigue. (12)

UNIT-V

9. (a) Explain the Break Even Analysis and its importance. (6)

- (b) What is Ergonomics? Explain the design of controls. (6)

OR

10. Define value engineering and explain process selection and material selection in value engineering. (12)