

22622

M.Tech 2nd Semester (MAE) CBCS Scheme

Examination, May-2017

MECHANICAL DESIGN-I

Paper-MTMA 22 C1

Time allowed : 3 hours]

[Maximum marks : 100

Note : Question no.1 is compulsory and attempt one question from each section.

1. Describe : 20
- (a) Brainstorming methods
 - (b) Feasibility study
 - (c) Ergonomic considerations in design
 - (d) Factor of safety

Section-A

2. Explain the design consideration of costing, forging and machining. 20
3. Explain the terms : 20
- (a) Stress concentration factor
 - (b) Fatigue stress concentration factor
 - (c) Endurance limit
 - (d) Notch sensitivity

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Section-B

4. When is the best time in the product development process to do quality function development ? What is the best software for doing QFD. 20
5. Describe : 20
 - (a) Manufacturing process
 - (b) Casting and casting design
 - (c) Forging and forging design
 - (d) Hot working processes

Section-C

6. Explain the methods of reducing stress concentration. Explain factor of safety for fatigue loading. 20
7. Explain general considerations in Machine Design and selection of factor of safety. 20

Section-D

8. Advantages and disadvantages of welded joints over Riveted Joints. Explain the elements of a welding symbol. 20
9. Explain : 20
 - (a) Design for assembly
 - (b) Design for manufacturing

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