

**23010**

**M. Tech. (ME) 2nd Semester (Manufacturing & Automation) Examination, May-2015**

**MECHANICAL DESIGN-I**

**Paper-906**

*Time allowed : 3 hours ]*

*[Maximum marks : 100*

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*Note : All questions carry equal marks. Attempt any five questions.*

1. Discuss the concept of brain storming in context to mechanical design. 20
2. Explain the Quality Function Development. 20
3. List and explain the mechanical and thermal properties of the engg. materials. 20
4. Explain the design for assembly concept with suitable example. 20
5. What is the production techniques and write its types. Write down design consideration for the casting. 20
6. What is surface heat treatment and explain the different types of surface treatment methods with suitable diagram. 20
7. What are the design consideration for manufacturing of cast iron component? 20

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**8. Write short notes on**

**20**

- (a) Metal forming**
- (b) Surface treatment**
- (c) Metal bonding.**