

**B.Tech. MECHANICAL ENGINEERING
(COMPUTER INTEGRATED
MANUFACTURING)**

Term-End Examination

June, 2015

**BME-023 : ADVANCED MANUFACTURING
TECHNOLOGY**

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions. All questions carry equal marks.

1. (a) Explain the main features of sequential engineering approach. 5
- (b) Explain the foundation model of concurrent engineering with a neat diagram. 5
2. (a) Explain the different approaches for design assembly. 5
- (b) What do you understand by “nano-technology” ? List the various applications of nano-materials. 5
3. Explain the working of Selective Laser Sintering (SLS) with a neat sketch. 10

4. (a) What are the advantages and disadvantages of rapid prototyping? 5
- (b) Explain the guidelines for implementation of Concurrent Engineering (CE) projects. 5
5. (a) Explain in detail Kano's model. 5
- (b) What are the various principles of Concurrent Engineering (CE)? Describe in detail any one of them. 5
6. Describe the following in detail :
- (a) Relationship Matrix of House of Quality 5
- (b) Correlation Matrix of House of Quality 5
7. Classify the Rapid Prototyping (RP) processes. Also list down the advantages associated with these processes. With the help of a suitable example explain the advantage of RP over conventional manufacturing process. 10
8. (a) Enumerate the steps involved in shell investment casting. 5
- (b) Explain about the necessity of the reverse engineering. 5

9. (a) Differentiate between Parallel Kinematic Machines (PKMs) and Serial Machines. 5
- (b) Describe the process of 3D printing with a neat sketch. 5
10. Write short notes on any *two* of the following: 5+5=10
- (a) QFD Process
- (b) E-manufacturing Environment
- (c) Direct and Indirect Rapid Tool Process
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