

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

00642

**Term-End Examination**

**December, 2017**

**BME-012 : MANUFACTURING SYSTEMS,  
INTEGRATION AND CONTROL**

*Time : 3 hours*

*Maximum Marks : 70*

**Note :** Attempt any *five* questions. Assume any missing data suitably.

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1. (a) Define control architecture. What do you understand by hierarchical control system ? 7
- (b) What is automation ? Discuss its role in manufacturing. 7
2. (a) What do you understand by manufacturing database ? How are they classified ? Explain any one of them in detail. 7
- (b) What do you understand by the concept of data integration ? Discuss different types of multi-objective decision support systems. 7

3. (a) How can system approach be used to integrate a manufacturing enterprise ? Describe briefly. 7
- (b) Define mass customization. Explain the various methods to achieve mass customization. 7
4. (a) What is Bionic Manufacturing System ? Explain it with the help of an example. 7
- (b) What is Agile Manufacturing System ? Describe various enablers of an agile manufacturing system with the help of appropriate examples. 7
5. (a) Define "Supply Chain Management". How is it different from logistics management ? 7
- (b) What do you understand by six-sigma method of quality control ? Describe the basic steps of six-sigma. 7
6. (a) What is the need of inspection and quality control in a manufacturing plant ? Explain with examples. 7
- (b) What is Rapid Response Manufacturing (RRM) ? Explain any one technique that can be used for obtaining RRM. 7

7. (a) Explain the characteristics of computer controlled scheduling with the help of neat diagrams. 7
- (b) What is Knowledge Management ? Briefly describe the general issues of knowledge representations. 7
8. (a) Define Deadlock. Identify different types of deadlocks occurring in a manufacturing shopfloor. List down different approaches to model these deadlocks. 7
- (b) Explain the following : 7
- (i) Gantt Chart
  - (ii) Process Design
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