

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

00258

**Term-End Examination**

**June, 2014**

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

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any *five* questions of the following.

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1. (a) What is automation ? Discuss its role in manufacturing.
- (b) What is hierarchical computer manufacturing control ? Explain about control at operative level. 7+7
2. (a) Define real-time control system architecture. Explain its uses and also list out its internal architecture units.
- (b) Describe about hierarchical levels in manufacturing systems integration. 7+7

3. (a) Why is data integration necessary for an integrated manufacturing enterprise ?
- (b) Explain the changes required in the present day manufacturing system to adopt agile manufacturing. 7+7
4. (a) What is meant by Bionic Manufacturing System ? How is a bionic manufacturing system used to make the system intelligent ?
- (b) What is meant by Holonic Manufacturing System (HMS) ? Describe the communication protocols used in HMS. 7+7
5. (a) Write short notes on the following :
- (i) e-commerce
- (ii) e-procurement
- (b) Discuss in brief the framework of shop floor control system. 7+7
6. (a) What do you understand by statistical quality control ? Differentiate between different types of control charts.
- (b) What are the different types of agents in system architecture ? Discuss about the functions of part agents. 7+7

7. (a) What is meant by deadlock ? Discuss the deadlock prevention and detection strategies.

(b) What do you understand about CMM ? Describe the various advantages of CMM in manufacturing systems.

7+7

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