

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

00673

Term-End Examination

June, 2018

**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) What are the various elements used to represent the manufacturing control system ? Draw and discuss the control loop of manufacturing system. 7
 - (b) What is Manufacturing System Integration (MSI) architecture ? Discuss its role in computer integrated manufacturing. 7
 2. (a) Explain the need of computer simulation and modeling techniques in the context of enterprise integration. 7

- (b) What is Material Requirement Planning (MRP) ? Describe in detail, the different components of MRP with the help of block diagram and examples. 7
3. (a) What are the different types of databases used for manufacturing control system ? Explain in detail. 7
- (b) What do you mean by re-configure manufacturing system ? Discuss its advantages over other manufacturing systems. 7
4. (a) What do you mean by mass customisation ? Explain the various methods of mass customisation with a neat diagram. 7
- (b) Briefly describe fractal manufacturing system. Also describe the different functional modules of fractal manufacturing systems. 7
5. (a) Explain with the help of neat diagram, the different components of a co-ordinate measuring machine. 7
- (b) What is AGV scheduling ? Explain the features of AGV scheduling. 7

6. (a) Describe the main objectives of short-term scheduling and control. 7
- (b) Describe the role of information technology in the decision making process of supply chain management. 7
7. (a) What is a "Holon" ? List different types of Holons. Explain the communication protocols applicable in the Holonic manufacturing system. 7
- (b) What are the different phases of shop floor control system ? Discuss in the framework of shop floor control system. 7
8. (a) Explain various paradigms of virtual manufacturing systems. 7
- (b) What is e-collaboration ? Explain its application in the manufacturing system. 7
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