

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

**Term-End Examination, 2019**

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

**Time : 3 Hours**

**Maximum Marks : 70**

---

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

---

1. (a) What is JIT production system ? Explain why the need of MRPII is felt over existing MRP. [7]
- (b) Discuss the need of computer simulation and modeling techniques in the context of enterprise integration. [7]
2. (a) What are the various types of enablers used for achieving agile manufacturing paradigms ? Explain. [7]



- (b) Define Supply Chain Management (SCM).  
Discuss Business Process in SCM framework. [7]
3. (a) What do you understand by six sigma method of quality control ? Describe the steps in six sigma method. [7]
- (b) Describe the different types of the deadlock occurring in the manufacturing shop floor. Illustrate through suitable example. [7]
4. (a) Discuss about the unique characteristics of Computer Controlled Scheduling (CCS). What are the points which originate uniqueness of CCS ? [7]
- (b) What is Flexible Routing Adaptive Control System (FRACS) ? Describe the function of control system and route of simulation system in FRACS. [7]
5. (a) What is the need of inspection and quality control in a manufacturing plant ? Discuss the application of Statistical Quality Control (SQC). [7]

- (b) What are the various aspects of scheduling ?  
Give comparative details of various priority rules.

[7]

6. (a) What is meant by Holonic Manufacturing System (HMS) ? [7]

- (b) Discuss the changes required in the present day manufacturing system to adopt agile manufacturing system. Explain advantages and disadvantages too. [7]

7. Write short notes on **any four** of the following : [3.5x4=14]

- (a) Bill of Materials (BOM)  
(b) Decision Tree  
(c) E-commerce  
(d) Automated Guided Vehicle (AGV)  
(e) Bionic Manufacturing System

----- x -----