| BME-012 |

B.Tech. MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

00755 Term-End Examination

December, 2014

BME-012 : MANUFACTURING SYSTEMS, INTEGRATION AND CONTROL

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt any* **seven** *questions. All questions carry equal marks.*

1. (a) Explain in brief the controls exercised at the supervisory level and the operative level in a hierarchical computer manufacturing control.   5

   (b) What is Material Requirement Planning (MRP) ? What are its main inputs ?   5

2. (a) Define the manufacturing lead time and the capacity as performance measures for a production system.   5

   (b) Briefly describe the Manufacturing System Integration (MSI).   5

3. How can systems engineering approach be formulated and implemented as an integrated manufacturing system ? *10*

4. What is Rapid Response manufacturing ? Explain the role of computer and IT for Rapid Response manufacturing. *10*

5. (a) What do you mean by agent, autonomous agent and agent based systems in the context of next generation manufacturing systems ? *5*

    (b) What is fractal manufacturing system ? *5*

6. (a) What is the importance of generic cell control architecture ? *5*

    (b) How is knowledge represented in knowledge base for scheduling ? *5*

7. What are the various aspects of scheduling ? Explain each of them. *10*

8. Discuss the advantages of integration of Supply Chain Management (SCM). *10*

9. (a) What are the different sequencing rules for a manufacturing process ? *5*

    (b) What do you mean by six-sigma method of quality control ? *5*

10. Write short notes on any *two* topics out of the following : *2×5=10*

    (a)   Discrete event simulation

    (b)   Process capability

    (c)   Neural network

    (d)   Just in time (JIT) production system

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