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BME-012

01037

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

June, 2013

BME-012 : MANUFACTURING SYSTEMS, INTEGRATION AND CONTROL

Time : 3 hours *Maximum Marks : 70*

*Note : Attempt **any five** of the following. Assume any missing data suitably.*

1. (a) What are the different types of databases used for manufacturing control system? What are the rules to be taken into account while assigning control tasks to different hierarchical levels ? 7

   (b) Brief discuss integration architectures with neat sketch. 7

2. (a) What do you mean by agent, autonomous agents, and agent based systems ? 7

   (b) What do you mean by Fractal manufacturing system ? Discuss the different functional modules of fractal manufacturing system ? 7

3. (a) What are the assumptions in job shop scheduling (JSS) ? Discuss the unique characteristics of computer controlled scheduling. 7

(b) What are the various aspects of scheduling ? Give comparative details of various priority rules. 7

4. (a) Discuss the advantages of integration of supply chain activities. What do you understand by hierarchical planning ? 7

(b) What are the different sequencing rules ? What do you understand by process design ? How it can be implemented in the shop floor environment ? 7

5. (a) What is the need of inspection and quality control in a manufacturing plant ? Discuss the application of statistical quality control 7

(b) Discuss the deadlock avoidance policy based on petrinets. 7

6. (a) What is Flexible routing adaptive control system (FRACS) ? Describe the function of control system and route of simulation system in FRACS. 7

(b) Discuss the application of GANTT chart in shop floor control. Also, discuss its various other applications. 7

7. (a) What do you understand by AGV scheduling ? Give some features of AGV scheduling. 7

(b) Discuss about the unique characteristics of computer controlled scheduling. What are the points which originate uniqueness of CCS ? 7