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BME-012

01526

BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING (COMPUTER INTEGRATED MANUFACTURING)

Term-End Examination

June, 2010

BME-012 : MANUFACTURING SYSTEMS, INTEGRATION AND CONTROL

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **any seven** questions of the following. Use of calculator is allowed. Assume any missing data.*

1. What are basic elements of a manufacturing system ? Explain with the help of examples. **10**

2. Explain various phases of Structured Analysis and Design Technique (SADT) as used for investigating various aspects of a manufacturing system. Also list various problems faced by modern manufacturing industries. **10**

3. Discuss Manufacturing System Integration Architecture (MSI). List down its units alongwith details. Also explain the hierarchical levels in MSI. **10**

4. Explain the achievement of integrated control through Decision Support Systems and Artificial Intelligence techniques. **10**

5. What is Wolon ? List down different types of Wolons. Explain the process of Wolonic manufacturing system. **10**

6. What is virtual manufacturing system ? Explain virtual manufacturing process with the help of examples. **10**

7. What do you understand by supply chain management. Discuss role of IT in supply chain management. Explain the management of supply chain when considering supply chain construction, structure and design. **10**

8. What is knowledge based scheduling ? Explain architecture of a knowledge based expert system. **10**

9. Explain the automata approach for the modelling of deadlocks in manufacturing system. **10**

10. Write short note on ***any two*** of the following : **5+5=10**
    (a) Flexible routing adaptive control system
    (b) Agents in architecture of control system
    (c) Agile manufacturing
    (d) Six sigma method of quality control