

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

Term-End Examination

June, 2017

00474

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

Time : 3 hours

Maximum Marks : 70

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

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1. (a) Differentiate between hard automation and flexible automation. Discuss the different levels of automation. 6
 - (b) Differentiate between semi-automated and fully-automated machines. 3
 - (c) Discuss the role of a computer control system in automated manufacturing systems. 5
 2. (a) Briefly explain Structured Analysis and Design Technique (SADT) methodology. 6

- (b) Write short notes on the following : 4
- (i) Bill of Materials
- (ii) Just-in-Time (JIT) Production System
- (c) Briefly explain the different engineering functions performed under CAD and CAM. 4
3. (a) What do you mean by mass customization ?
How can it be achieved ? 4
- (b) What do you mean by Agile Manufacturing ?
Explain the enablers of Agile Manufacturing. 6
- (c) What is Concurrent Engineering ? 4
4. (a) What is Bionic Manufacturing System ?
How is it used to make the system intelligent ? 5
- (b) What are the different functional modules of Fractal Manufacturing System ? 4
- (c) Discuss the concept of Virtual Manufacturing System. 5
5. (a) Discuss the role of Automated Guided Vehicles (AGV) in Automated Manufacturing Systems and explain its major components. 7
- (b) Discuss the main objective of short-term scheduling and control. 4
- (c) What do you mean by knowledge-based scheduling ? 3

6. (a) Briefly explain the structure of Artificial Neural Networks (ANN). 7
- (b) Define Supply Chain Management. Discuss its components. 7
7. (a) Explain in brief the simulation model. 4
- (b) Explain cell control module. 5
- (c) Discuss the interfacing of coordinate measuring machines with computer numerically controlled machine tools in brief. 5
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