

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

Term-End Examination

December, 2015

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

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **seven** questions. All questions carry equal marks. Use of calculator is allowed.*

1. (a) What do you understand by automation in manufacturing ? Describe the elements of automated system with a suitable diagram. 5
- (b) Draw a diagram of a large scale production system and describe any two components of manufacturing system. 5
2. (a) What is production, planning and control ? How does the control function work in any production system ? 5
- (b) What are the three phases of shop floor control system ? Explain any two of them. 5

3. What is Quality Function Deployment (QFD) ?
What are the objectives of QFD ? Describe the
process of QFD, with a neat diagram. 10
4. What do you understand by agile manufacturing ?
List out the enablers of agile system. Explain any
one of them in detail. 10
5. (a) Describe the basic concept of agent based
manufacturing system. 5
(b) What are the key issues in developing
intelligent agent based manufacturing
system ? 5
6. (a) Why is AGV scheduling considered as a
critical decision making problem ? Give
some features of AGV scheduling. 5
(b) Describe Supply Chain Management (SCM)
with suitable example. 5
7. Define Quality. How are control charts helpful in
maintaining quality in manufacturing process ?
Also list out different types of control charts. 10
8. Describe the concept of Six Sigma in Quality
Control. Also explain the step by step process of
Six Sigma implementation in a service industry. 10

9. List out the different types of agents in system architecture. Discuss about the functions of communication agents. 10

10. Write short notes on any *four* of the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) JIT Manufacturing
 - (b) Statistical Quality Control (SQC)
 - (c) Web Enabled Supply Chain
 - (d) Work In Process (WIP)
 - (e) Bill Of Materials (BOM)
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