

22674

M.Tech. 3rd Semester (MAE) (CBCS Scheme)

Examination, December-2018

MANUFACTURING AUTOMATION

Paper-16MMA 23C2

Time allowed : 3 hours] [Maximum marks : 100

Note: Students are required to attempt any five questions.

The students have to attempt first common question, which is compulsory and one question from each of four units.

1. (a) Elements of an automated system.
- (b) Material transport system.
- (c) What is Group technology?
- (d) Discrete Manufacturing.
- (e) Control system.
- (f) Product manufacturability.
- (g) What is Robot?
- (h) AI in manufacturing. 2½×8=20

Unit-I

2. Write about:
 - (a) Levels of automations. 10
 - (b) Automation Productivity. 10
3. Describe the principle and design considerations of material handling system. What are the functions of storage system? 20

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Unit-II

4. Discuss about:
- (a) FMS audits planning and implementation. 10
 - (b) Fundamentals and analysis of transfer lines. 10
5. What are the principles of industrial control system? Compare process industries with discrete manufacturing industries. What is the role of actuators in control system? 20

Unit-III

6. Write note on:
- (a) Orientation devices. 10
 - (b) Escapement devices. 10
7. Explain in detail the Penumatic circuits for automatic die casting machine. 20

Unit-IV

8. State the principle of artificial neural networks in automation. Discuss any two robots for their application in automation. 20
9. Write about:
- (a) Principle of Fuzzy control. 10
 - (b) Need for system modeling. 10