

22674

**M.Tech 3rd Semester (MAE) CBCS Scheme
Examination, December-2017
MANUFACTURING AUTOMATION
Paper-16MMA23C2**

Time allowed : 3 hours] [Maximum marks : 100

*Note : Students are required to attempt any five questions.
The students have to attempt Q. No. 1, which is
compulsory and one question from each of the four
units.*

1. (a) Define automation.
- (b) Design consideration of material handling system.
- (c) Overview of manufacturing system.
- (d) What is a sensor ?
- (e) FMS
- (f) What are orientation devices.
- (g) Logic devices.
- (h) Need for system modeling. 2.5×8=20

Unit-I

2. (a) Discuss basic principles and strategies of automation. 10
- (b) What do you mean by automation ? Describe its basic elements. 10

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[P.T.O.]

3. What is material handling system ? Describe any three material handling systems with neat sketches and working details. 20

Unit-II

4. Write about :
 (a) GT and cellular manufacturing. 10
 (b) Flow lines and transfer Mechanisms. 10
5. Differentiate between :
 (a) Continuous versus discrete control. 10
 (b) Process industries versus discrete manufacturing industries. 10

Unit-III

6. Discuss about :
 (a) Product Manufacturability. 10
 (b) Part orientation and escapement. 10
7. State the role of Boolean algebra in automation. How pneumatic sensors are different from hydraulic sensors ? 20

Unit-IV

8. Write about :
 (a) Building mathematical model of a manufacturing plant. 10
 (b) AI in manufacturing. 10
9. Write about :
 (a) Fuzzy decision and control. 10
 (b) Application of robots for automation. 10