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Roll No . ...

MMCM - 105

M.E./M.Tech. I Semester

Examination, June 2016

Manufacturing Automation and Mechatronics

Time : Three Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Draw neat diagrams wherever required.

1. a) Define the term Automation. State the importance and feasibility of automation in manufacturing.

   b) State in brief; types of plant layouts with their comparative advantages and limitations.

2. a) Explain automated flow lines with storage buffers.

   b) Explain the computer simulation of automated flow lines.

3. a) Compare types of automated assembly.

   b) Discuss about analysis of multi-station assembly machines.

4. a) What are the objectives and functions of mechatronics? State its role in manufacturing.

   b) Compare traditional design Vs mechatronics design.

5. a) State the classification of sensors. State its selection criteria and applications in manufacturing.

   b) State brief about working principle of temperature sensor and light sensors.

6. a) Explain the working of D/A and A/D convertor. State its applications in manufacturing.

   b) State the basics of programming of microprocessor using 8085 instructions.

7. a) Explain the principles of PLC. How selection of PLC is done?

   b) Explain the following terms related to PLC :

   i) Mnemonic

   ii) Timers

   iii) Internal Relays

   iv) Counters

8. a) State briefly; any one case study of mechatronics system.

   b) Discuss the interlinking of design and mechatronics.

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