Total No. of Questions :9] *[Total No. of Printed Pages :2*

Roll No .....

MMCM - 105

M.E./M.Tech., I Semester

Examination, June 2014

Manufacturing Automation And Mechatronics

Time : Three Hours

Maximum Marks : 70

Note : Attempt all questions. All questions carry equal marks.

1. a) What is automation? State different level of automation. 7

   b) Discuss the different strategies for improving the productivity and quality through automation in production system. 7

OR

2. a) Discuss the design for automated assembly. Describe various type of automated assembly system. 7

   b) Explain the term automated flow lines with storage buffers. 7

3. a) Explain the architecture data flow and instruction execution of 8085 microprocessor. 7

   b) With timing diagram, explain the memory read operation in 8085 microprocessor. 7

OR

4. a) Discuss in detail the specification of a stepper motor. 7

   b) Write an assembly language program based on 8085 microprocessor instruction set to search the smallest data in a set. 7

5. Design a Vehicle Engine Management system on the basis of mechatronics system design. 14

OR

6. Derive a pick and place robot system. Explain the various mechatronics elements used in the design. 14

7. a) With the help of a block diagram, explain the main components of a PLC. 7

   b) Write a short note on jump control used in PLC using a ladder diagram. 7

OR

8. a) List the factors to be considered, while selecting a PLC. 7

   b) Discuss PLC programming. Explain various methods for PLC programming. 7

9. Write short notes on the following: (Attempt any four) 14

   i) Automated flow lines with storage buffers
   ii) Past feeding devices
   iii) Proximity sensor
   iv) Interfacing D/A converters
   v) Internal relays and counters
   vi) Mechatronics systems

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