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Reg. No. : .....

Name : .....

Seventh Semester B.Tech. Degree Examination, May 2012
(2008 Scheme)
08.702 MECHATRONICS (MPU)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions from Part **A**.

1. Define Accuracy and sensitivity.
2. Explain an open loop control system.
3. What is the difference between smart sensor and microsensor ?
4. Explain the working of a tactile sensor.
5. What is anti friction bearing ?
6. Model a series connected resister, inductor and capacitor circuit with an output voltage Vc and input voltage V.
7. What is MOSFET ?
8. Explain the working of ultrasonic range finder.
9. Explain various types of strain gauges.
10. What is a CCD camera ? **(10×4=40 Marks)**

PART – B

Answer **one full** question from **each** Module in Part – B.

Module – I

11. a) Explain the working of LVDT. **8**

    b) With a neat sketch explain hydraulic system to automate a work holding device. **12**

P.T.O.

12. a) Explain the working of MEMS based accelerometer. 12

b) What are the applications of MEMS based gyroscope ? 8

Module – II

13. a) Explain about fluid and thermal system building blocks. 12

b) Describe the working of hydro dynamic bearing. 8

14. a) With a block diagram explain adaptive control of machine tools. 12

b) Explain ladder logic diagrams of PLC. 8

Module – III

15. a) Explain various image processing techniques. 10

b) Describe AC, DC and brushless motors. 10

16. a) Explain with neat diagram the construction and working of a pick and place robot. 12

b) Explain how eddy current method is used in sensing. 8

(3×20=60 Marks)