Reg. No. _____

Karunya University

(Karunya Institute of Technology and Sciences)

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

Model Question Paper – December 2012

Subject Title: MECHATRONICS **Time: 3 hours**

Subject Code: 09ME253 **Maximum Marks: 100**

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. Name any two examples of mechatronic systems.
2. What is the main drawback with pneumatic systems?
3. What is sensitivity of a transducer?
4. Define discrete-time signal processing.
5. What is the use of Solenoids?
6. Name two main groups in DC Motors.
7. List the various parts of microprocessor systems.
8. What is interfacing?
9. What is the use of counters?
10. What is shift register?

PART – B (5 x 3 = 15 MARKS)

11. List the various types of measurement systems.
12. What is the principle of operation of an Eddy current proximity sensor?
13. What is Stepper motor? Name the various types of stepper motor.
14. Draw the internal architecture of a microprocessor.
15. What is the use of Internal relays in a PLC?

PART – C (5 x 15 = 75 MARKS)

16. Explain the working principle of hydraulic actuation system with a neat sketch.

(OR)

17. Describe the working of pneumatic process control valve with neat sketch.

18. Explain various terminologies used to define the performance of transducers.

(OR)

19. Write short notes on:
    a. Selection of Sensors b. Light Sensors

20. Explain various interface requirements in detail.

(OR)

21. Describe any two electromechanical drives in detail.

22. Explain the function of microcontroller with block diagram.

(OR)

23. Explain the working principle of a digital to analog converter.

24. Draw the architecture of a PLC and explain its components.

(OR)

25. Discuss about Ladder programming in PLC.

Signature of Faculty Member Signature of Director/HOD