

15863

Name:

Reg. No.

EIGHTH SEMESTER B.TECH. DEGREE EXAMINATION, JUNE 2011

ME.04.803 – Mechatronics and Machine Controls

Time: Three hours



PART – A

(Answer all questions) (8X5= 40)

- I.
1. Brief about the scope of mechatronics.
 2. Write short notes on piezoelectric transducer.
 3. Explain the principles of automatic controls.
 4. Explain the concept of stability.
 5. Brief about the applications of actuators.
 6. Write the principles of fluid logic control.
 7. What are the types of control valves?
 8. Brief about time display valves.

PART – B (15X4= 60)

- II. a. Explain the working principle of Hall effect sensor and Pyro electric sensor.

(OR)

- b. Discuss with diagrams the working of three proximity sensors.

- III. a. Explain in detail about adaptive control system.

(OR)

- b. Explain closed loop system with a suitable example and compare open and closed loop system with suitable example.

- IV. a. (i) What is meant by electropneumatic systems? Explain with an example (8).
(ii) What is the selection procedure of actuators? (7)

(OR)

- b. (i) What is actuator synchronizing? Explain (7).

- (ii) Explain any two mechanical actuators (8).

- V. a. Explain a hydraulic press circuit which employs regeneration principle as well as double pump unloading feature.

(OR)

- b. With the help of a neat sketch explain the construction and working of a shuttle valve and servo valve. Give their graphical symbol.