C 29733

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Name.....................................

Reg. No.................................

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION OCTOBER 2012

EE 09 L23—PROCESS CONTROL AND INSTRUMENTATION

(2009 Admissions)

Time : Three Hours   Maximum : 70 Marks

Part A

Answer all questions.

1. What are the applications of PLC ?

2. Mention the relation between semiconductor resistance and temperature.

3. What are the advantages of d.c. motor as an actuator ?

4. What is meant by dead time in a process ?

5. Why does parameter tuning require for a controller ?

(5 × 2 = 10 marks)

Part B

Answer any four out of six questions.

6. With a suitable sketch, explain why driving a vehicle is considered as a servomechanism ?

7. Explain the working of any one of the pneumatic actuator.

8. Write a short note on stepper motor.

9. Develop an error detector using OPAMP.

10. How does a PI controller become superior to P controller ?

11. How does Bode plot help to assess the system stability ?

(4 × 5 = 20 marks)

Part C

Answer four full questions.

12. Explain the role of DAC and ADC in a digital control system.

Or

13. With suitable examples differentiate between damped response and cyclic response.

14. Write short notes on :

    (a) Current to Pressure Controller.

    (b) Magnetic flow meter.

Or

15. Explain the working of thermistor. Also suggest a signal conditioning system for thermistor.

Turn over

16. Compare the performance and applications of relay with and without differential gap.

Or

17. Develop and explain pneumatic pressure controller.

18. Write short notes on :

    (a) Feedforward control and

    (b) Supervisory control.

Or

19. With the help of block diagram explain the features of a cascaded process.

(4 × 10 = 40 marks)