Total No. of printed pages = 2

Et-507/Elect. Ins/5th Sem/2013/M

ELECTRONIC INSTRUMENTATION

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Describe the principle of operation of ultrasonic flowmeter.

   (b) How an ionization gauge operates ?

   10+4=14

2. (a) Discuss the principle of operation of moving coil type velocity transducer.

   (b) Describe the optical pyrometer and its operating range. 6+8=14

3. Write down the full operation of a thermocouple. Mention its advantages and disadvantages.

   10+4=14

[Turn over

4. (a) How a moving magnet type of tachometer is used for velocity measurement ?

   (b) Describe briefly law of intermediate temperature and law of intermediate metals in relation to thermocouple. 8+6=14

5. Describe the operation of DC and AC tachogenerators. 8+6=14

6. (a) Explain the operation of LVDT transducer for measurement of displacement.

   (b) Describe the working principle of Pirani gauge. 10+4=14

7. Write short notes on any *two* : 7×2=14

   (i) Thermistors

   (ii) Capacitive transducer

   (iii) Total radiation pyrometer

   (iv) DC bridge for signal conditioning

   (v) Photoelectric transducer.