



N – 736

Seat No.	
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T. E. (Electrical) (Semester – V) Examination, 2010
INSTRUMENTATION TECHNIQUES (New Course)

Day and Date : Wednesday, 12-5-2010
Time : 10.00 a.m. to 1.00 p.m.

Total Marks : 100

- Instructions : 1) Attempt any three questions from each Section.*
2) Draw neat sketch wherever necessary.
3) Figures to the right indicate full marks.

SECTION – I

1. a) Explain with neat block diagram and an example, a generalised instrumentation system ? 8
- b) Explain the method of measurement of displacement using capacitive transducer. 8
2. a) With neat diagram, explain programmable gain amplifier. Also derive expression for gain. 8
- b) Explain the working principle of R.T.D. and its application ? 8
3. a) Explain the working principle of following transducers : i) Piezoelectric transducer ii) L.V.D.T. 8
- b) Explain the necessity of signal conditioning and describe the working of any one type modulator and demodulator. 8
4. Explain in brief (any three) : 18
 - i) Sample and Hold circuit
 - ii) Data acquisition systems
 - iii) Voltage to frequency converter
 - iv) Instrumentation Amplifier.

P.T.O.

N – 736



SECTION – II

5. a) Explain various elements used for input and output for PLC. 8
b) Explain Ladder diagram logic with examples. 8
6. a) With neat diagram explain working and applications of seven segment display. 8
b) Compare in between Analog display and digital display. 8
7. a) Describe instrumentation setup for measurement of temperature using thermistor. 8
b) Describe instrumentation setup for measurement of strain. 8
8. Explain in brief (any three) : 18
- a) X–Y Recorders
 - b) Oscillograph.
 - c) Installation and selection of PLC
 - d) Instrumentation setup for measurement of speed.
 - e) Types of PLC system.
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