

S.B. Roll No.....

INSTRUMENTATION AND PLCS
5th/ECE/EMP/ECEII/1619/0646/Nov'15

Duration: 3 Hours

M.Marks=75

Note: Attempt all Questions

SECTION-A

Q1. Do as directed: -

10x1.5=15

- (i) LVDT stands for.....
- (ii) CMRR stands for.....
- (iii) X-Y recorder records one quantity with respect to.....
- (iv) CPU stands for.....
- (v) Light emitted by an LED depends on.....
- (vi) A thermocouple is a junction of Metals.
- (vii) Self-generating type transducers are.....transducers.
- (viii) Unbounded strain gauges are
- (ix) Null type recorders arerecorders.
- (x) Input impedance of galvanometer type instrument is.....

SECTION-B

Q2. Attempt any FIVE questions.

5x6=30

- (i) Discuss any two characteristics of instrumentation amplifiers.
- (ii) Discuss the memory structure of PLC.
- (iii) Distinguish between active and passive transducers.
- (iv) Explain the basic operation and principle of PLC.
- (v) Write a program performing a timer operation using ladder programming.
- (vi) Discuss proximity probes for measurement of r.p.m.

SECTION-C

Q3. Attempt any THREE questions

3x10=30

- (i) Draw the block diagram of measurement system and discuss the function of various elements.
- (ii) Discuss the limitations of relays and advantages of PLC over electromagnetic relays.
- (iii) Write note on any two:
(a) LVDT (b) Thermistor (c) Thermocouple
- (iv) Discuss principle of operation, construction and applications of a graphic recorder.