



# COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)  
SHIVAJI NAGAR, PUNE - 411 005

## END Semester Examination ~~IS-201-1~~ ~~(15-222)~~ Engineering Instrumentation

Course: B.Tech

Branch: Instrumentation and Control Engineering

Semester: Sem III

Year: 2014-2015

Max.Marks:60

Duration: 3 Hours Time:- 10 am - 1 pm

Date:- 20 NOV 2014

### Instructions:

MIS No.

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1. Figures to the right indicate the full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/Sharing of anything like stationery, calculator is not allowed.
5. Assume suitable data if necessary.
6. Write your MIS Number on Question Paper

Q. 1 A Design temperature display system using RTD (pt100) for the 10 range of 0°C to 300°C. Draw block diagram of designed system. Explain each block in detail.  
Given:-  
Resistance of pt100 at 0°C :- 100Ω  
Resistance of pt100 at 300°C :- 205Ω

B Strain gauge is used to measure pressure. Explain working 5 principle of strain gauge.

C Discuss drawbacks of capacitive displacement sensor. 5

Q. 2 A LVDT output is 0 to 4500mv. Calculate the sensitivity of LVDT. 10 Which measuring device you will use to measure LVDT output? Draw block diagram of the same instrument and explain it in detail.

B Discuss ultrasonic level measurement system in detail. 5

Q. 3 Solve any five 25

A What do you mean by PLC? Explain with the help of block schematic.

B How will you do automation? Explain with the help of an application in your field.

- C Explain closed loop control with the help of general control system block diagram. Also explain process of control system design.
- D What are the different types of feedback control? Explain any one in detail.
- E Explain working of Cathode ray oscilloscope. List any four applications in your field.
- F Explain features and controls of function generator with the help of front panel display.
- G Discuss selection factors of transducers.