Total No. of Questions—**8**] [Total No. of Printed Pages—**2**

Seat No.	

[5057]-271

S.E. (Instrumentation and Control) (First Semester) EXAMINATION, 2016

SENSORS AND TRANSDUCERS

(2012 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Neat diagrams must be drawn wherever necessary.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if necessary.

1. (*a*) Explain in detail the importance of measurement. [4]

(*b*) How torque is measured using flat spiral spring ? [4]

(*c*) What is LVDT ? Draw and label parts of LVDT. [4]

Or

2. (*a*) What are advantage and disadvantages of resistive potentiometer ? [4]

(*b*) Explain the working of Diaphragm used for force measurement. [4]

(*c*) Draw sketch of any sensor used for angular displacement measurement. [4]

P.T.O.

3. (*a*) Explain the working of Bimetallic thermometer in detail. [4]

(*b*) What are the different types of Manometer ? [4]

(*c*) Compare difference between bellows and diaphragm. [4]

Or

4. (*a*) Draw and label parts of Dead weight tester gauge. [4]

(*b*) State any *two* laws of thermoelectricity. [4]

(*c*) What are different types and material pairs of thermocouple. [4]

5. (*a*) Explain working of Pitot tube with neat sketch for flow Measurement. [8]

(*b*) Explain in detail about Reynolds' number. [5]

Or

6. (*a*) Draw and explain working principle of orifice plate for flow Measurement. [8]

(*b*) Explain the basic principle of Electromagnetic flow-meter. [5]

7. (*a*) Explain U tube with neat sketch for density measurement. [8]

(*b*) Explain pH measurement system in detail. [5]

Or

8. (*a*) Explain ultrasonic method for water level measurement with a neat sketch. List out any *two* advantages of this method. [8]

(*b*) Explain working of Saybolt viscometer with neat sketch. [5]