DE-1311
M. Sc. (Tech.) (In Instrumentation) (Sem. I)
Examination
March / April – 2016
INS-13 : Measurement Techniques

Time : 3 Hours] [Total Marks : 70

Instruction :

1. Attempt any two.
   (1) Define error. Explain types of error in detail.
   (2) Give classification instruments.
   (3) Define: (1) Accuracy (2) Precision (3) Drift (4) Sensitivity (5) Stability

2. (a) Explain essential forces required driving an instrument. (7)
   (b) What is transducer? Discuss factor influencing in choice of transducer. (7)

   OR

   Explain chi-square goodness of fit with example.

3. (a) Explain working principle and construction of LVDT. (7)
   (b) Explain displacement measurement with block diagram. (7)

   OR

   (a) Explain hall effect transducer with necessary diagram.
   (b) Explain photovoltaic cell in detail. Also give advantages and disadvantages.
4 (a) Explain strain gauge transducer in detail.

OR

Explain different source of noise in detail.

(b) Derive the equation of gauge factor for strain gauge.

OR

Explain classification of transducers.

5 (a) Explain signal to noise ratio with necessary equations.

OR

Explain piezoelectric transducer with neat sketch.

(b) Explain high pressure measurement using capacitive transducer.

OR

Explain unbounded resistance strain gauge with necessary diagram.