



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 140410

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15 MEASUREMENT AND METEROLOGY

Time : 2 Hours]

[Total Marks : 50

NOTE : Attempt all the questions.

1 Attempt any four of the following : **4×3.5=14**

- (a) What is the function of transducer? What is the difference between active and passive transducer? What is the advantage if the output of the transducer is an electrical signal?
- (b) Explain briefly the working principle of LVDT. How can displacement be measured with a LVDT ?
- (c) Explain what is meant by systematic and random error?
- (d) Explain any one recording device, with schematic diagram.
- (e) Define accuracy, precision, drift and sensitivity.

- 2** Attempt any two of the following : **6×2=12**
- (a) Describe PIRANI GAUGE and its working principle .What is the range of absolute pressure which can be measured with this instrument ?
 - (b) Describe an optical pyrometer and explain its working.
 - (c) Name different types of STRAIN GAUGES and explain any one of them with working and diagram.
- 3** Attempt any two of the following : **6×2=12**
- (a) What is COMPARATOR? Explain SIGMA COMPARATOR with diagram.
 - (b) Describe construction and working principle of AUTO COLLIMATOR.
 - (c) Explain the principle of INTERFEROMETRY and describe MICHELSON INTERFEROMETER.
- 4** Attempt any two of the following : **6×2=12**
- (a) How is CIRCULARITY or ROUNDNESS of a specimen checked accurately? Describe at least two methods.
 - (b) How is quantitative evaluation of a surface roughness done? What different methods of such evaluation are used in industry?
 - (c) What do you mean by STRAIGHTNESS? Describe any one method of measuring straightness of a surface.