



(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 :  $6 \times 2 = 12$

- (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 :  $6 \times 2 = 12$

- (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 :  $6 \times 2 = 12$

- (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.