



**B.E DEGREE EXAMINATIONS: NOV 2015**

(Regulation 2009)

Seventh Semester

**AUTOMOBILE ENGINEERING**

AUE125: Measurements and Metrology

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. The \_\_\_\_\_ of dimensional measurements may be regarded as a function of the occurring errors and if their assessment.
  - a) Stability
  - b) Reliability
  - c) Readability
  - d) Sensitivity
2. Which of the following error's are regularly repetitive in nature
  - a) Illegitimate error
  - b) Random errors
  - c) Controllable error
  - d) Systematic errors
3. Element of the indicating device carrying the scale is called \_\_\_\_\_
  - a) Dial
  - b) Transducer
  - c) Index
  - d) Frame
4. The NPL gauge interferometer is designed and used for
  - a) Absolute measurement of length of slip gauges
  - b) Judging flatness of surface
  - c) Measurement of fringe displacement
  - d) Parallelism of two ends of slip gauge
5. LVDT is used to measure
  - a) displacement
  - b) pressure
  - c) temperature
  - d) any of the above
6. Panel type instruments are used in
  - a) power stations
  - b) automobiles
  - c) industries
  - d) all of the above
7. The use of thermocouple meters for ac measurement leads to a scale which is
  - a) linear
  - b) square law
  - c) logarithmic
  - d) exponential



b) Explain the features of a digital vernier caliper and compare it with a sliding vernier caliper.

23. a) Discuss the construction, working and applications of a McLeod gauge.

**(OR)**

b) Brief the application of pressure measurement and monitoring with a case study.

24. a) i) Explain principle, construction and working of Resistance Temperature Detectors (RTD). (7)

ii) Discuss common types of pyrometers and explain one in detail. (7)

**(OR)**

b) Explain different types of thermocouples with its construction and circuits for high temperature measurements.

25. a) i) Explain any one type of force measuring devices. (7)

ii) Explain principle, construction and working of load cells. (7)

**(OR)**

b) Explain the working principle of eddy current and chassis dynamometers.

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