

**DIPLOMA IN MECHANICAL ENGINEERING  
(DME)**

**Term-End Examination**

**December, 2015**

**BME-062 : METROLOGY AND INSTRUMENTATION**

*Time : 2 hours*

*Maximum Marks : 70*

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*Note : Answer any **five** questions. All questions carry equal marks.*

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1. Distinguish between the following :  $4 \times 3 \frac{1}{2} = 14$
- (a) Systematic errors and Random errors
  - (b) Static response and Dynamic response
  - (c) Overdamped system and Underdamped system
  - (d) Magnification and Amplification
2. (a) Explain in detail the principle and construction of an auto collimator with a neat sketch. 7
- (b) How is the displacement measured using laser interferometer ? 7

3. (a) Define the various terminologies related with screw thread. 7
- (b) Explain any two taper measurement methods. 7
4. (a) Explain the constructional features and applications of coordinate measuring machine. 7
- (b) Explain the laser telemetric system with the help of a sketch. 7
5. Draw the block diagram of generalized measurement system and explain the different stages with examples. 14
6. (a) Explain servo-motor mechanism in detail. 7
- (b) Discuss the different allowances that are considered in manufacture of a gauge. 7
7. Write short notes on any **four** of the following :
- $$4 \times 3 \frac{1}{2} = 14$$
- (a) Tolerances
- (b) Angle Dekkor
- (c) Toolmaker's Microscope
- (d) Micrometer
- (e) Geometrical Tests
- (f) Gear Tooth Vernier