

337356(37)

BE (3rd Semester)
Examination, Nov.-Dec., 2018
(New Scheme)

Mechanical Measurements & Metrology

Time Allowed : 3 hours Maximum Marks : 80
Minimum Pass Marks : 28

Note : (i) Answer all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d) of each question.
(ii) The figures in the right-hand margin indicate marks.

- 1. (a) Differentiate Precision and Accuracy. [2]
- (b) Explain static and dynamic performance characteristics of measuring devices. [7]
- (c) What is the need for tolerances? Differentiate Unilateral tolerance and Bilateral tolerance, with suitable examples. [7]

- (d) Explain the characteristics of transducers. Provide suitable examples. [7]
- 2. (a) Explain principle of thermocouple. [2]
- (b) Explain the working of Pirani gauge with the help of neat diagram. [7]
- (c) What is the working principle of strain gauge? Explain any two types of strain gauges with diagrams. [7]
- (d) Explain working of optical pyrometer with diagram. [7]
- 3. (a) What is meant by data acquisition system? [2]
- (b) Explain working of ultrasonic flow meter with a neat sketch. [7]
- (c) Explain any two devices to measure vibrations. [7]
- (d) Differentiate hot wire and magnetic meters to measure the flow as per working principle. [7]
- 4. (a) What is meant by 'standards of measurement'? [2]
- (b) Explain principle and working of tool makers microscope with diagram. [7]
- (c) What is the function of autocollimator? Explain its working and applications. [7]
- (d) Differentiate linear and angular measurement devices with examples. [7]

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5. (a) What are the principles of Interferometry? [2]
- (b) What is the need for comparator? Explain working of mechanical comparator with diagram. [7]
- (c) Explain working of coordinate measuring machine and its applications. [7]
- (d) Explain any two methods to measure the dimensions of screw threads. [7]

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