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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (2012 Onwards) (Sem.-5)
MECHANICAL MEASUREMENT AND METROLOGY
Subject Code : BTME-503
M.Code : 70604

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**1. Answer briefly :**

- (a) What is difference between mechanical and electronic instruments?
- (b) What do you understand by error propagation?
- (c) What is calibration? Why is it necessary?
- (d) Briefly explain the principle employed in manometers used for the measurement of pressure.
- (e) What are total radiation pyrometers? Where are they used?
- (f) How the metal resistance thermometers work?
- (g) What are comparators?
- (h) What is hot wire anemometer?
- (i) What is an amplifier? What is its necessity?
- (j) List difference principles on which the force measurements are made.

SECTION-B

2. What are strain gauges? Explain their working and applications.
3. *“Explain construction and working of vibration reed tachometer. Is this a precise instrument”?* Comment.
4. Explain any two methods to measure velocity.
5. How errors are identified and handled in test data?
6. Explain any two types of accelerometers.

SECTION-C

7. Describe the principle of operation of piezoelectric transducers. Identify the input and output of the system. Explain why it is desirable that piezoelectric transducers should be used for the measurement of dynamic quantities only.
8. Discuss construction and working of various gauges to measure low pressure.
9. Explain various methods to measure torque.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.