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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(AE) (2012 to 2017) (Sem.-5)
MEASUREMENTS AND INSTRUMENTATION
Subject Code : BTAE-505
M.Code : 70488

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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**Answer briefly :**

1. What do you mean by deviation?
2. What is calibration?
3. What are the advantages of digital instruments over analog instruments?
4. What do you mean by variable inductance?
5. Draw the block diagram of digital data acquisition system.
6. For what purpose load cell is used?
7. For what purpose seismic device is used?
8. What do you understand by separation of force components?
9. Name different types of force measurement systems.
10. What is electrical resistance thermometer?

SECTION-B

11. A voltmeter is used to measure a known voltage of 75 volts. Forty percent of the readings are within 0.8 volt of true value. Estimate the standard deviation for the meter and the probability of an error of 1.2 volt.
12. What are the different types of error? Explain how to eliminate errors in instrument?
13. Briefly describe the construction and working of Opto Electrical transducer and piezo electric transducer.
14. What do you understand by zero, ramp and sinusoidal input signals?
15. Discuss in brief opto-electrical transducers.

SECTION-C

16.
 - a) Explain in detail the various statistical concepts of mean, median, mode, range, standard deviation and variance.
 - b) Discuss the construction, working and applications of a Transmission dynamometer with the help of a neat sketch.
17. Explain the construction and working of hydraulic load cell and torque transducer.
18.
 - a) Explain in detail the non-electrical methods of temperature measurement.
 - b) Discuss the working of radiation pyrometer.

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.