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Question Paper Code: 93B06

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Third Semester

Biomedical Engineering

19UBM306 – SENSORS AND MEASURING TECHNIQUES

(Regulation 2019)

Duration: One hour

Maximum: 30Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- Using a voltmeter measured value is 24.3V, while its true value is 24V. CO2- App
What is the relative error of measurement?
(a) 1.25% (b) 1.2% (c) 1.3% (d) 1.4%
- Which standard is fixed and used for industrial laboratories? CO1- R
(a) International standard (b) Primary standard
(c) Secondary standard (d) Working standard
- Which of the following can be used to measure using thermistors? CO1-U
(a) Very low (b) In-between 100Ω and 1MΩ
(c) Greater than 1MΩ (d) None of the above
- Thermocouple generate output voltage according to _____ CO1- U
(a) Circuit parameters (a) Humidity (b) Temperature (d) Voltage
- Piezo-electric transducers are CO1- U
(a) Passive transducers (b) Inverse transducers
(c) Digital transducers (d) Pulse transducers
- Which of the following is a photoemissive cell? CO1- U
(a) Photomultiplier tubes (b) Barrier layer cell (c) Galvanic cell (d) Rochell-salt cell
- A bridge circuit uses which method of measurement? CO1- U
(a) Absolute (b) Relative (c) Differential (d) Comparison
- Which one of the following is a frequency sensitive bridge CO1- U
(a) Kelvin (b) Schering (c) Wien (d) Maxwell

9. Accuracy of a DVM is _____ CO5- U
(a) Low (b) High (c) Medium (d) Zero
10. In strip chart recorders, the self-balancing potentiometers plot emf as a function of CO5- U
(a) Another emf (b) Frequency (c) Time (d) Pressure

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. List the calibration methods of measuring instruments. Explain about the static calibration in detail. CO1- U (8)
12. Describe the working principle and characteristics of Thermocouple. CO1- U (8)
13. Compare the characteristics and applications of various photoelectric transducers. CO3- Ana (8)
14. Which bridge is used to measure frequency and explain the measurement procedure? CO4- Ana (8)
15. Draw the block diagram of CRO and explain the function of each block. CO1- U (8)