Reg. No. : | | | | | | | | | | |

Question Paper Code: 44305

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

Fourth Semester

Electrical and Electronics Engineering

14UEE405 - ELECTRICAL MEASUREMENTS AND INSTRUMENTATION

(Regulation 2014)

Duration: 1:15hrs   Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The span of a zero-centered voltmeter having a scale from -10 *V* to +10 *V* is _____

    (a) 0 *V*   (b) -10 *V*   (c) 10 *V*   (d) 20 *V*

2. The ratio of maximum displacement deviation to the full scale deviation of the instrument is called

    (a) Static sensitivity   (b) Accuracy   (c) Linearity   (d) Precision

3. PMMC instrument gives uniform scale because

    (a) It uses spring control
    (b) It uses eddy current damping
    (c) The deflection torque is proportional to the instrument current
    (d) Both (a) and (c)

4. The damping torque must operate only when the moving system of the indicating instrument is

    (a) Actually moving   (b) Stationary
    (c) Just starting to move   (d) Near its full deflection

5. Maxwell-Wien bridge is used to measure

    (a) Inductance   (b) Capacitance
    (c) Dielectric loss   (d) Frequency

6. Kelvin double bridge is best suited for the measurement of

    (a) Inductance   (b) Capacitance
    (c) Low resistance   (d) High resistance

7. Which part is called as heart of CRO?

    (a) CRT   (b) Sweep generator
    (c) Trigger circuit   (d) Amplifier

8. In CRO the time base signal is applied to

    (a) Y-plates   (b) X-plates
    (c) Either X-plate or Y-plate   (d) Both X-plate and Y-plate

9. The linear variable differential transformer transducer is

    (a) Inductive transducer   (b) Non-inductive transducer
    (c) Capacitive transducer   (d) Resistive transducer

10. What is a reading of 0.5245 on 1 *V* range in four and a half digit voltmeter displayed as

    (a) 0.5245   (b) 00.524   (c) 000.52   (d) 0000.5

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11.   Draw the block diagram showing the basic functional elements of an instrument and explain the functions of each.   (8)

12.   Derive the construction and working of PMMC instrument and also derive its torque equation.   (8)

13.   Describe the circuit of Kelvin double bridge used for measurement of low resistance.
                                                                                         (8)

14.   Explain the construction and its working principle of X-Y Recorder.   (8)

44305

15 Explain the construction and working principle of Linear Variable Differential Transducer(LVDT). (8)

44305