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Question Paper Code: 45403

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

Fifth Semester

Electronics and Communication Engineering

14UEC503 - ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

(Regulation 2014)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- The most common method for measurement of low resistance is
 - Wheatstone bridge
 - Potentiometer method
 - Voltmeter-ammeter method
 - Kelvin's double bridge
- As the deflection of the moving system increases, the controlling torque in an indicating instrument_____.
 - remains the same
 - increase
 - decrease
 - becomes zero
- A pattern displayed by oscilloscopes which has a steady characteristic is called
 - Lissajous pattern
 - Nyquist pattern
 - Barkhausen's criterion
 - Fermat's pattern
- A true rms reading voltmeter uses two thermocouples in order
 - to increase sensitivity
 - that the second thermocouple cancels out the no-linear effects of the first thermocouple
 - to prevent drift in the d.c amplifier
 - all the above

5. In signal generators
 - (a) energy is created
 - (b) energy is generated
 - (c) energy is converted from a simple d.c source into a.c energy at some specific frequency
 - (d) all the above

6. Harmonics are very closed in signal frequency hence _____ to distinguish.
 - (a) difficult
 - (b) easy
 - (c) very simple
 - (d) uncomplicated

7. The period mode preferred for measurement of _____ frequency in a frequency counter
 - (a) very High
 - (b) high
 - (c) very low
 - (d) low

8. The device used to measure the voltage, current and resistance is known as
 - (a) Voltmeter
 - (b) Ammeter
 - (c) Wattmeter
 - (d) Multimeter

9. The main component of data acquisition system is a
 - (a) Function generator
 - (b) Ammeter
 - (c) Sensor
 - (d) Voltmeter

10. _____ instrument is used in computer controlled instrumentation
 - (a) Signal generator
 - (b) Spectrum analyzer
 - (c) Sweep generator
 - (d) Q meter

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in details about the various types of errors in measurement systems. (8)
12. With neat sketch explain the block diagram of digital storage oscilloscope. (8)
13. Explain the functional block diagram of Function generator and mention its features. (8)
14. Classify the different types of digital voltmeter. Explain the operation of ramp type digital voltmeter. (8)
15. Explain the characteristics of the IEEE 488 bus. How it is used as an interface? Give its advantages and disadvantages. (8)

