

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 53502

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

Third Semester

Electronics and Instrumentation Engineering

15UEI302 - ELECTRICAL AND ELECTRONIC MEASUREMENTS

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. No eddy current and hysteresis losses occur in
 - (a) Electro-static instruments
 - (b) PMMC type instruments
 - (c) Moving iron instruments
 - (d) Electrodynamicometer instruments
2. Low resistance is measured by
 - (a) De Sauty's bridge
 - (b) Maxwell's bridge
 - (c) Kelvin's double bridge
 - (d) Wien bridge
3. The power delivered to a 3-phase load can be measured by the use of 2-wattmeter only when the
 - (a) Load is balanced
 - (b) Load is unbalanced
 - (c) 3-phase load is connected to the source through 3-wires
 - (d) 3-phase load is connected to the source through 4-wires
4. In an electrodynamicometer type of wattmeter
 - (a) the current coil is fixed
 - (b) the pressure coil is fixed
 - (c) any of the two coils
 - (d) both the coils should be movable

5. Precision measurement of resistances is generally carried out by
 - (a) Potentiometer method
 - (b) CRO method
 - (c) Voltmeter-ammeter method
 - (d) Bridge method

6. Current transformers and potential transformers are used to increase the ranges of
 - (a) DC ammeter and DC voltmeter
 - (b) AC ammeter and DC voltmeter
 - (c) AC ammeter and AC voltmeter
 - (d) DC ammeter and AC voltmeter

7. The resolution of a DVM with 4 digit
 - (a) 1/4
 - (b) 1/10
 - (c) 1/1000
 - (d) 1%

8. In a ramp type DVM, the multi vibrator determines the rate at which the
 - (a) clock pulses are generated
 - (b) measurement cycles are initiated
 - (c) It oscillates
 - (d) Its amplitude varies

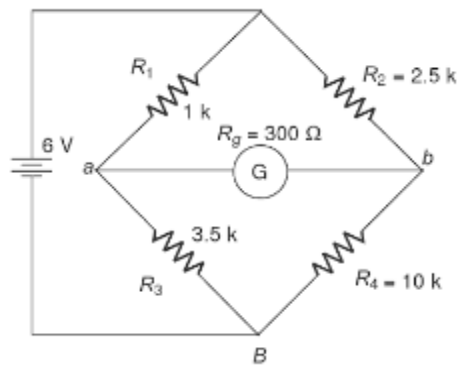
9. The time base signal in a CRO is a
 - (a) Rectangular waveform
 - (b) High frequency Saw tooth waveform
 - (c) High frequency Sinusoidal waveform
 - (d) Square waveform

10. X-Y recorders is the type of
 - (a) Graphic recorders
 - (b) Oscillosgraphic recorders
 - (c) Magnetic tape recorders
 - (d) Digital recorders

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Describe the construction details and working of an electrodynamicmeter type instrument. (8)



12. With a neat diagram, explain the construction and working principle of dynamometer type Wattmeter. (8)
 13. Describe the construction and working of a co-ordinate type AC potentiometer. How is it standardized? Explain how an unknown voltage can be measured with it. (8)
 14. Explain how the Q-meter can be used for the measurement of Q-factor and effective Resistance and discuss the source of error. (8)
 15. Sketch the block diagram of the CRO and illustrate the operation with its merits and demerits. (8)
-