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**3rd/4th/6th Sem. / Eltx, EI, Med., Eltx. Mechatronics (6th Sem) GE (4th Sem), Power Eltx, Elect. & Eltx. Engg.**

**Subject:- Electronic Instruments and Measurement**

Time : 3Hrs. M.M. : 100

## SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 _____represents the degree of correctness of the measured value with respect to the true value.

a) Sensitivity b) Accuracy
c) Precision d) Resolution

Q.2 In measurement system, which of the following static characteristics are desirable

a) Accuracy b) Sensitivity
c) Reproducibility d) All of the above

Q.3 Multimeter can be used to measure

a) Resistance b) DC Voltage
c) AC Voltage d) All of the above

Q.4 Cathode rays can be deflected by

a) Magnetic field b) Electric field
c) Both a & b d) None of these

Q.5 The source of emission of electrons in a CRT is

a) PN Junction diode
b) Accelerating mode



c) A barium and strontium oxide coated cathode
d) Pre accelerating anode

Q.6 Inductance can be measured by using

a) Maxwell's bridge b) Kelvin's bridge
c) Desauty's bridge d) Wein's bridge

Q.7 The AC bridges are used to measure impedances consisting of_____

a) Capacitances and inductances
b) Resistances and inductances
c) Capacitance only
d) Inductance only

Q.8 The output wave of Schmitt trigger is

a) Triangular wave b) Sine wave
c) Square wave d) Saw tooth wave

Q.9 Oscillator uses

a) Positive feedback b) Negative feedback
c) Both d) None of the above

Q.10 An integrating type digital voltmeter measures

a) Peak value b) Average value
c) rms value d) None of the above

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Define precision.

Q.12 Define resolution.

Q.13 Moving iron type instrument can be used for both AC and DC. (True/False)

Q.14 A dual beam oscilloscope has _____electron guns.

Q.15 CRT stands for_____

Q.16 A RLC bridge can measure resistance only. (True/False)

Q.17 Define Q factor.

Q.18 A triangular waveform is obtained by _____ square wave.

Q.19 What is use of logic probe?

Q.20 Logic analyzer are used for _____and_____ of digital circuits.

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Differentiate between Direct and Indirect methods of Measurement.

Q.22 Define Standard. Classify Standards and explain any one Standard.

Q.23 Define Errors. Explain systematic Errors.

Q.24 Explain the working of moving iron instrument.

Q.25 What are the applications of CRO?

Q.26 Write the front panel controls of CRO.

Q.27 Explain the working principle of DSO with the help of block diagram.



Q.28 Write a short note on Maxwell's Bridge.

Q.29 What is Q meter? Explain its working principle.

Q.30 Write a short note on Distortion Factor Meter.

Q.31 What is instrumentation Amplifier? List the advantages and disadvantages of it.

Q.32 Differentiate between Analog and Digital instruments.

Q.33 Explain Dual slope Type Digital Voltmeter.

Q.34 Explain the working principle of Signature Analyzer.

Q.35 Write a short note on Logic Pulser.

## SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain construction and working principle of PMMC instruments.

Q.37 Draw and explain block diagram of CRT.

Q.38 Explain the working of Wheatstone Bridge. Give the advantages and disadvantages of it.