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181036/171036/121036
/031036

3rd 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 The least incremental value of input or output that can be detected by the measuring device is

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

Q.2 A process which is used to check the instrument against a standard and to find the error is

a) Standard b) Calibration
c) Systematic error d) Gross error

Q.3 Ammeter can be used to measure

a) Resistance b) Current
c) Voltage d) All of the above

Q.4 The Electron Gun Assembly consists of

a) Cathode
b) Control grid
c) Focusing and Accelerating anodes
d) All of the above

Q.5 An Aquadag is used in CRO to collect

a) Primary electrons
b) Secondary electrons
c) Both primary and secondary electrons
d) None of the above

Q.6 Resistance can be measured by using

a) Maxwell's Bridge b) Wheatstone's Bridge
c) Desauty's Bridge d) Wein's Bridge

Q.7 RLC Bridge is used to measure

a) Inductance b) Resistance
c) Capacitance d) All of the above

Q.8 Triangular wave shape is obtained by

a) Differentiating a sine wave
b) Differentiating a square wave
c) Integrating a sine wave
d) Integrating a square wave

Q.9 DVM is the abbreviation for which of the following

a) Digital Voltmeter
b) Digital Volume Meter
c) Digital voltage Meter
d) Digital Vacuum Meter

Q.10 The main advantage of Digital instrument over analog is

a) Higher accuracy
b) Better resolution
c) Low power consumption
d) All of the above

SECTION-B

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

Q.11 _____ is the heart of CRO.

Q.12 DSO stands for_____.

Q.13 Measurement of quantity is a comparison of _____ quantity with standard value.

Q.14 Define error.

Q.15 PMMC stands for_____.

Q.16 Function generator can produce different types of waveforms like Sine, Square and Triangular. (True/False)

Q.17 Signal generator is also known as Attenuator. (True/False)

Q.18 What is Logic Analyzer?

Q.19 What are the types of DVM?

Q.20 What is the use of Instrumentation amplifier?

SECTION-C

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

Q.21 Differentiate between Absolute Instruments and Secondary Instruments.

Q.22 Classify Error. Explain any one type of Error.

Q.23 Differentiate between Primary and Secondary standard.

Q.24 What are the advantages and disadvantages of Moving Iron Instruments?

Q.25 Explain the measurements of Voltage and Time Period using a CRO.

Q.26 With the help of diagram explain the working of DSO.

Q.27 Write the specifications of CRO.

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

Q.29 Explain the working principle of Q-meter.

Q.30 Write a short note on Pulse Generator.

Q.31 Draw and explain the block diagram of Distortion Factor Meter.

Q.32 Write any five differences between Analog and Digital instruments.

Q.33 Explain Ramp Type Digital Voltmeter.

Q.34 Draw and explain the block diagram of Logic Analyzer.

Q.35 Write a short note on Logic Probe.

SECTION-D

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

Q.36 Draw and explain block diagram of CRO.

Q.37 Explain the working principle of Maxwell's Induction Bridge.

Q.38 Explain the block diagram and working of Function Generator.