DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

CENTRALIZED QUESTION BANK

1040234440- MEASURING INSTRUMENTS AND SENSORS

DIRECTORATE OF TECHNICAL EDUCATION GOVERNMENT OF TAMILNADU

Course: Electronics and Communication Engineering

Subject : Measuring Instruments and sensors   **QP Code :**1040234440

Time : 3 Hours   **Date :**   **Session:**   **Max Marks:**100

Answer the following Questions

1   Extend the range of the given voltmeter.
2   Extend the range of the given ammeter.
3   Show how the range of the given voltmeter can be extended.
4   Show how the range of the given ammeter can be extended.
5   Compute the value of multiplier resistances for different range extension of the given voltmeter.
6   Compute the value of shunt resistances for different range extension of the given ammeter.
7   Calibrate the given ammeter
8   Calibrate the given voltmeter.
9   Determine the unknown resistance using the Wheatstone bridge.
10   Construct a bridge circuit for the measurement of unknown resistance.
11   Measure the value of unknown resistance using a bridge circuit.
12   Determine the self-inductance of an unknown coil using Maxwells bridge.
13   Construct a bridge circuit for the measurement of self-inductance of a coil.
14   Measure the value of self-inductance of a coil by using a bridge circuit.
15   Determine the capacitance of an unknown capacitor using Schering bridge.
16   Measure the value of unknown capacitance using a bridge circuit.
17   Construct a bridge circuit for the measurement of unknown capacitance.
18   Measurement of voltage, frequency, time period and phase of any periodic waveform using CRO.
19   Using CRO, show how amplitude, frequency, time period and phase can be measured in a periodic waveform.
20   Carry out amplitude, time period and phase measurement using CRO for
21   sinusoidal waveform.
22   Measurement of voltage, frequency time period and phase of any periodic waveform using DSO.
23   Using DSO, show how amplitude, frequency, time period and phase can be measured in a periodic waveform.
24   Carry out amplitude, time period and phase measurement using DSO for sinusoidal waveform.
25   Determine voltage for resistor connected in series and parallel using a DVM.
26   Show that voltage division occurs in a series circuit and voltage is constant in a parallel using a DVM.
27   Generate the sinusoidal waveform for different frequency and amplitude using the Function Generator and plot the waveform.
28   Generate and plot the waveforms of sinusoidal waves of different frequency and amplitude in the laboratory.
29   Measurement of voltage, resistance, current and continuity for a single loop resistive network using DMM.
30   Carry out voltage, resistance and current measurement in a single loop resistance network and also check for continuity using DMM.

31	Determination of displacement using LVDT transducer
32	Carry out linear displacement measurement by using a passive transducer.
33	Measure displacement and plot a graph displacement against voltage while using LVDT transducer.
34	Measurement of temperature using RTD /thermistor/thermocouple sensors.
35	Show how temperature measurement is carried out using RTD/Thermistor /Thermocouple sensors.
36	Determination of load/torque/force using strain gauge sensor.

Allocation of Marks

Sl.No	Description	Marks
1	Aim & Apparatus Required	5
2	Circuit Diagram	20
3	Connections / Execution	25
4	Output / Result	10
5	Written Test	30
6	Viva Voce	10
	Total Marks	**100**