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Even Semester Examination 2023

Paper Name: Electronics Instrumentation and Measurement **Paper Code: BTECE 404**
Time: 3 Hours **Maximum Marks: 75**

Section A

Note: Attempt ALL the questions **7x5=35**

Q. No.	Question	Marks	CO	BL
1.	Explain Gross error, Measurement error and Systematic error.	5	CO1	3
2.	Differentiate between accuracy and precision. Explain with the help of an example.	5	CO1	1
3.	Analyse the working of Anderson AC bridges. List out their advantages and disadvantages.	5	CO2	5
4.	Explain the working of the deflection system in CRO.	5	CO4	5
5.	Differentiate between Digital Storage Oscilloscope (DSO) and Conventional Storage Oscilloscope	5	CO5	6
6.	What are digital data recording systems? Explain with example.	5	CO3	6
7.	Design a multirange milli-ammeter using a basic movement with an internal resistance Rm = 50Ω and a full-scale deflection current of 1mA. The ranges required are: a) 0-10 mA, b) 0-50 mA, c) 0-100 mA, d) 0-500 mA	5	CO2	4

Section B

Note: Attempt any FOUR (4) Questions **4x10=40**

Q. No.	Question	Marks	CO	BL
1.	Write a short note on the following: (a) Linearity (b) Resolution (c) Tolerance (d) Range (e) Repeatability	10	CO1	3
2.	Explain the working and construction of D'Arsonval's Galvanometer.	10	CO2	4
3.	Derive the expression for Maxwells bridge. Also find the expression for the calculation of its Q factor.	10	CO3	3
4.	What is a function generator? What are its different applications?	10	CO5	2
5.	What are the required parameters for the measurement of resistances? Explain the working of Kelvin Double Bridge circuit.	10	CO4	6
6.	A PMMC device has a coil of diameter 15mm×12mm. the flux density in the air gap is 1.8×10^{-3} and the spring constant is 0.14×10^{-6} Nm/radian. Determine the no. of turns required to produce an angular deflection of 90° when a current of 5mA is flowing through the coil.	10	CO2	4

BL : Bloom's Taxonomy Level (1-Remembering, 2-Understanding, 3-Applying, 4- Analysing, 5-Evaluating, 6- Creating)