ROLL NO.	

PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 40 | Max Time: 120 Mins | Weightage: 40 %

ENDTERM FINAL EXAMINATION

I Semester AY 2017-18 | Course: **ECE/EEE 209 Electrical Electronic Measurement and Instrumentation** | 18 DECEM 2017

Instructions:

i. Write legibly

ii. Scientific and non programmable calculators are permitted

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Part A

[3Q x 4M= 12 Marks]

1. Define distortion, harmonics, total harmonic distortion .Explain the working principal of Harmonic Distortion Analyzer
2. Explain the working of Thermistor. List the advantages and disadvantages..
3. Explain the method of measuring linear displacement using LVDT .State the advantages and disadvantages of LVDT.

Part B

[2Q x 8 M= 16Marks]

4. a) Derive the expression for Wheatstone bridge to measure value of unknown resistance.

   b) Calculate the value of Rx(Unknown) in Wheatstone bridge if

   R1= 400Ω, R2=5KΩ and R3=2KΩ

   c) Calculate the current through the galvanometer in the circuit diagram of fig 1.1

   R1= 1KΩ, R2=1KΩ and R3=10KΩ and R4=10.3KΩ with E= 1V

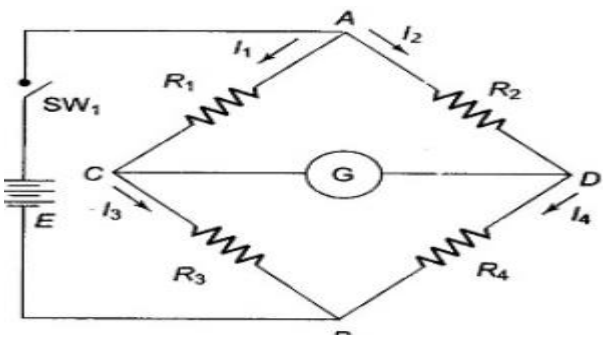

Fig 1.1

5. State and Explain active filters. Design a low pass filter having a cutoff frequency of 3 KHz with pass band gain of 2.5.

Part C

[1Q x 12 M= 12Marks]

6. Explain how an Op-amp used as

a. Summing amplifier

b. Integrator

c. Instrumentation amplifier**.**

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SCHOOL OF ENGINEERING

Max Marks: 20 | Max Time: 60 Mins | Weightage: 20 %

TEST 1

I Semester 2017-2018 | Course: **ECE/EEE 209 Electrical and Electronic Measurements and Instrumentation** | 16 SEPT 2017

Instructions:

i. Write legibly
ii. Scientific and non programmable calculators are permitted

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Part A

(3Q x 3 M= 9 Marks)

1. The expected value of voltage across a resistor is 100 V. However the voltmeter reads a value of 99 V. Calculate a) absolute error b) % error c) % accuracy .
2. Explain how series ohm meter is calibrated .Why is there zero mark on right side for a series type ohmmeter
3. Define working principal of PMMC instrument how a PMMC instrument is used to measure ac current.

Part B

(1 Q x 5 M= 5 Marks)

4. Convert a basic D' Arsonval movement with an internal resistance of 50Ω and a full scale deflection current of 2 mA into a multirange dc voltmeter with a voltage range of 0-10V,0-50V,0-100V and 0-250V.

Part C

(1 Q x 6 M= 6 Marks)

5. Discuss various characteristics for unvarying process condition. Table 1.1 gives the set of 10 measurements that were recorded in laboratory. Calculate the precision of the 5th measurement when $\overline{Xn}$ =100.2

Measurement number	Measurement Value Xn
1	98
2	101
3	102
4	97
5	101
6	100
7	103

Table 1.1