**S.V. ENGINEERING COLLEGE**

Karakambadi Road, Tirupati - 517507

IIIB.TechI Semester IMid Term Examinations, Nov/Dec - 2020

**15A02501- ELECTRICAL MEASUREMENTS (SET- B)**Branch:**Electrical and Electronics Engineering**

Time: 90Min Max. Marks: 30M

**Answer any Three Questions 3X10 = 30 M**

1. Explain principle of operation of an Electrodynamometer type of Instrument and derive the expression for Torque equation for the same? [10M] [CO1] [BL1]

2. a) Discuss measurement of phase, frequency CRO. [5M] [CO2] [BL2] [5M]

b.) Explain the errors in MI instrument. [5M] [CO2] [BL2] [5M

3.a) Design an Argon shunt to provide an ammeter with the current ranges **1** A, 5 A and IOA. deflection A Basic meter Resistance is 50 ohm & Full Scale deflection current is 1 mA. [5M] [CO2] [BL3]

b. ) Explain the Loss of charge method for the measurement of high resistance. [5M] [CO2] [BL3] [5M]

4.Explain the construction and working of Anderson bridge with suitable diagrams. [10M] [CO1] [BL1] [10M]

5.Explain about Kelvin's Double Bridge with neat Diagram [10M] [CO1] [BL1]

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Signature of the Invigilator

Marks Obtained

Karakambadi Road, Tirupati - 517507

III B.Tech I Semester I Mid Term Examinations, Dec - 2020

**15A02501- ELECTRICAL MEASUREMENTS (SET- B)**

Branch:**Electrical and Electronics Engineering**

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| Roll Number: |  |  |  |  |  |  |  |  |  |  |

Time: 20 Minutes

Maximum Marks: 10

**I. Choose the Right Answer 10× 1/2 = 5 M**

1.Which of the following is recording instrument? [ ]

(A) Voltmeter (B) Ammeter (C) Energy meter (D) ECG

2.Electrostatic type instruments are primarily used as [ ]

(A) Voltmeter (B) Ammeter (C) Energy meter (D) Watt meter

3.Torque to weight ratio in an Analog instruments indicates [ ]

(A) Frictional error (B) Frequency error(C)Stray magnetic field error (D) None

4.Range of PMMC voltmeter is extended by using [ ]

(A) Shunts (B)Multipliers (C)Both (D) None

5.Spring are made with-------------material. [ ]

(A)Soft iron (B)Steel (C)Phosphor bronze (D)Silicon steel

6.Moving iron instrument is used for-------- [ ]

(A)D.C only (B)A.C only (C)Both A.C and D.C (D)None of these

7.Range of PMMC Ammeter is extended by using [ ]

(A)Shunts (B)Multipliers (C)Both (D) None

8.In an electro dynamometer type wattmeter’s [ ]

(A)The current coli is made fixed (B)The pressure coil is made fixed

(C)Any of the two coils made fixed (D)Both of the coils should be movable

9.In a spring controlled iron instruments, the scale is [ ]

(A)Uniform (B)Cramped at the lower end (C)Cramped at the upper end (D)Expanded both

10.Which of the following damping is used in PMMC instrument? [ ]

(A)Air friction damping (B)Eddy current damping (C)Fluid friction damping (D)None

**II. True or false 5× 1/2 = 2.5 M**

1. Schering Bridge is Suitable for the measurement of Inductance [ ]
2. For MI and PMMC instruments the scale is uniform [ ]
3. Whetstone Bridge is used to measure high resistance [ ]
4. Moving Iron type instruments Used for Both AC & DC [ ]
5. In an Instrument Controlling Torque 'cc =KO [ ]

**III. Fill in the Blanks 5× 1/2 = 2.5 M**

16) To extend the range of Voltmeter what is the Multiplier value …………..

17) To extend the range of Ammeter what is the Shunt value …………..

18) Low resistance in the range …….. …………..

19) Write the phase angle balance condition in AC Bridge………………..

20) n a spring controlled iron instruments, the scale is ……………...