*Total No. of Questions : 8]* *[Total No. of Printed Pages : 4*

**Roll No .....**

# EE-503(B)-CBGS

## B.Tech., V Semester

Examination, December 2020

## Choice Based Grading System (CBGS)

## Applied Instrumentation

***Time : Three Hours***

***Maximum Marks : 70***

***Note:*** i) Attempt any five questions.

ii) All questions carry equal marks.

iii) In case of any doubt or dispute the English version question should be treated as final.

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1. a) Differentiate between dual trace and dual beam CRO. With a block diagram, explain the working of CRO. 7

Dual trace Amp dual beam

b) What is transducer? Briefly explain the procedure for selecting a transducer. 7

2. a) Derive the equation of balance for Anderson bridge and also draw the phasor diagram. An AC bridge is balanced at 2 KHz with the following components in each arm: Arm AB=10KΩ, Arm BC=100μF in series with 100KΩ, Arm AD=50KΩ Find the unknown impendence R ± jX in the arm DC, if the detector is between BD. 7

b) Explain the Maxwell's bridge with their advantages and disadvantages. 7

3. a) What are Factors to be considered while selecting transducer? Write down Requirements of good transducers. 7

b) Explain the Resistance Temperature Detector also explain four wire RTD with diagram. 7

Resistance Temperature Detector four wire RTD

4. a) Explain how a PMMC can be used as a basic voltmeter. 7

basic

b) What is meant by Voltmeter sensitivity? Explain its relevance in circuit applications. 7

5. a) Explain in detail about Function generator? 7

b) What is wave analyzer? How it analyzes the harmonics? Explain. 7

Wave analyzer¡

6. a) Draw the circuit diagram of Schering Bridge. Derive the conditions for balancing the bridge and draw the phasor diagram during balanced condition. 7

b) Explain the linear variable differential transformer with the neat diagram. 7

7. a) Draw the resistance vs temperature graph of a thermistor and explain in detail. 7

b) Define the harmonic distortion and total harmonic distortion. Explain the parts of fundamental suppression HD analyser, its working and its advantages. 7

8. The expected value of the voltage across a resistor is 80V. However the measurement gives a value of 79V. Calculate:- 14

i) absolute error

ii) % error

iii) Relative accuracy

iv) % of accuracy

80V 79V



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