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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech III Year I Semester Regular Examinations March-2023
ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a Write a short note on CO1 L1 6M
(i) Gross Errors (ii) Systematic errors (iii) Random errors.
b Illustrate in detail about the statistical analysis of measurement data. CO3 L2 6M

OR

- 2 a Explain in brief about the working of basic DC Ammeter. CO1 L2 6M
b A 1 mA meter movement with an internal resistance of 100Ω is to be converted into a 0 – 100 mA. Calculate the value of shunt resistance required. CO3 L3 6M

UNIT-II

- 3 a Describe the working principle of a Triggered sweep CRO with a neat sketch. CO1 L2 6M
b Write a short note on Delayed Sweep. CO2 L1 6M

OR

- 4 a Sketch the horizontal deflection systems and explain it's working principle. CO3 L2 6M
b Sketch the Vertical deflection systems and explain it's working principle. CO3 L3 6M

UNIT-III

- 5 a Define Oscillator and Explain in detail about fixed and variable AF oscillators. CO4 L2 6M
b Using a neat block diagram explain the operation of a function generator. CO4 L1 6M

OR

- 6 a Draw the block diagram of logic analyzer and explain its working. CO4 L1 6M
b Write the applications of logic analyzer. CO3 L1 6M

UNIT-IV

- 7 a What are the errors and precautions to be taken while using the Bridge circuits? CO6 L1 6M
b What are the different types of AC bridges? Explain any one type of bridge. CO4 L1 6M

OR

- 8 a Explain briefly how a Maxwell Bridge is used for measuring an unknown inductance. CO2 L2 6M
b A Maxwell bridge is used to measure an inductive impedance. The bridge constants at balance are $C1= 0.01\mu F$, $R1=470k\Omega$, $R2=5.1k\Omega$ and $R3=100k\Omega$. Find the series equivalent of unknown impedance. CO4 L3 6M

UNIT-V

- 9 a With a neat sketch, explain the operation of LVDT. CO5 L1 6M
b Write the advantages & disadvantages of LVDT. CO6 L1 6M

OR

- 10 a Explain in detail about the Strain gauge Transducer. CO1 L2 6M
b Write the advantages & disadvantages of Strain gauge. CO6 L1 6M

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