

Roll No.
Printed Pages : 2

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BT-4 / M-14

ELECTRONICS INSTRUMENTATION AND MEASUREMENTS

Paper-ECE-202-E

Time allowed : 3 hours] [Maximum marks : 100

Note : Attempt five questions. At least one question from each unit.

Unit-I

1. (a) Discuss various types of errors in the instruments. 10
(b) Explain wheat stone bridge and Kelvin double bridge method used for measurement of resistance. 10
2. (a) Explain the method for the measurement of insulation resistance. 10
(b) Explain deflection type and null type techniques for measurement of instruments. 10

Unit-II

3. (a) Explain Maxwell Inductance capacitance bridge used for the measurement of inductance along with equivalent circuit and phasor diagram. 10
(b) A 1000 Hz bridge has the following constant : arm ab, $R_1 = 1000\Omega$ in parallel with $C_1 = 0.5 \mu f$: arm bc, $R_3 = 1000\Omega$ in series with $C_3 = 0.5 \mu f$: arm cd $L_4 = 30 mH$ in series with $R_4 = 200\Omega$ Find the constants of arm da to balance the bridge. Express the result as a pure resistance R in series with a pure inductance L or capacitance C. 10

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4. (a) Explain X-Y recorder and magnetic tape recorder. 10
(b) Explain CRO with help of suitable diagrams. 10

Unit-III

5. (a) How we can measure OP-Amp parameters ? 10
(b) Discuss wave analyzer in detail. 10
6. (a) Compare analogue and digital type instruments. 10
(b) Explain digital methods for time and frequency measurements. 10

Unit-IV

7. (a) Classify different types of transducer. Explain LVDT. 10
(b) Explain liquid level measurement. 10
8. (a) Explain multiplexing with the help of proper diagrams. 10
(b) Differentiate between A/D and D/A converters. 10

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