Total No. of Questions : 22 Total No. of Pages : 02

Roll No.

B.Tech IV sem (Main/Back) Exam April-May 2026
Electrical & Electronics Engg.
4EX3-04 Electronic Measurement & Instrumentation
Paper Code : 4E1320
EE, EX

Time: 3 Hours **Maximum Marks: 70**

Attempt all ten questions from Part A, five questions out of seven questions from Part B and three questions out of five questions from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No.205)

1. _____ 2. _____

Part A (Answer should be given up to 25 words only)

All questions are compulsory

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1. What are the applications of moving coil instruments?
2. What do you mean by phantom loading in energy meter?
3. Write the applications of Current transformers.
4. Define the term burden in instrument transformers.
5. What do you mean by standardization of potentiometers?
6. Differentiate the DC and AC potentiometers?
7. What are the various factors should be considered in measurement of earth resistances?
8. Draw the circuit diagram of Price's Guard wire method for measurement of resistances?
9. Draw the Phasor/vector diagram of Wien's bridges.
10. Draw the circuit diagram of Maxwell's Bridges.

10 x 2 = 20

Part B (Analytical/Problem solving questions)

Attempt any Five questions

1. Explain the construction and working of moving iron type instruments.
2. Derive the Expression of Blondel's Theorem for n-phase.
3. Explain the effect of variation of power factor of instrument transformers.
4. Draw and explain the diagram of slide wire potentiometers.
5. Draw and explain the circuit diagram of Kelvin's double bridge method for measurement of resistances.

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6. What are the various difficulties are encountered in measurement of low resistances.

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Explain their overcome techniques.

7. Explain the circuit diagram and Phasor/vector diagram of Anderson's Bridges.

5x 4 = 20

Part C (Descriptive/Analytical/Problem Solving/Design question)
Attempt any three questions

1. Explain the construction and working of single phase energy meters with merits and demerits.
2. Discuss the ratio and phase angle errors and their minimization techniques of instrument transformers.
3. Explain the working and applications of crompton potentiometers with neat diagram with merits and demerits.
4. Draw and explain the circuit diagram of measurement of earth resistances with applications.
5. Explain the circuit diagram and Phasor/vector diagram of De Sauty's Bridges with merits, demerits and applications.

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3 x 10= 30

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