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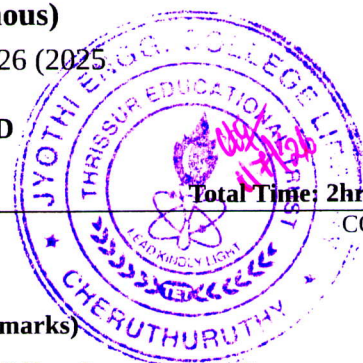
Name : _____



Jyothi Engineering College(Autonomous)
B. Tech Degree S2 (S) Examination, June 2026 (2025 Scheme)

25EET205 - MEASUREMENTS AND INSTRUMENTATION

Total Mark: 60



Total Time: 2hrs 30 min
CO MARK

PART A

(Answer All Questions. Each question carries 3 marks)

1. Define measurement. How does the direct comparison method differ from the indirect comparison method? CO1 (3)
2. State the functions of the controlling system in an indicating instrument. CO2 (3)
3. State the balance condition of a Wheatstone bridge and derive the expression for the unknown resistance at balance. CO3 (3)
4. State the purpose of Schering's Bridge. CO3 (3)
5. How are digital energy meters superior to induction type meters? List the advantages. CO4 (3)
6. State the reason for stray magnetic field interference in a dynamometer type wattmeter and mention the corrective measures. CO4 (3)
7. What is a Lissajous pattern? How is it obtained on a CRO? CO5 (3)
8. State the need for signal conditioning in instrumentation systems. CO5 (3)

PART B

(Answer any one full question from each module, each question carries 9 marks)

Module - 1

9. Explain the spring control method and discuss why it is preferred over gravity control in most instruments. CO2 (9)

OR

10. Describe the hierarchy of measurement standards and explain their importance in maintaining measurement consistency. CO1 (9)

Module - 2

11. Explain the step-by-step method for determining the B-H curve of a magnetic material with the help of a suitable circuit diagram. CO3 (9)

OR

12. Explain how unknown self-inductance is measured using Maxwell's Inductance bridge with neat circuit diagram. Derive the expression for unknown self-inductance. CO3 (9)

Module - 3

13. Draw and explain the block diagram of a Time of Day (TOD) meter and discuss its working. CO4 (9)

OR

14. With appropriate diagrams, explain the constructional details and working of CT and PT.

CO4 (9)

Module - 4

15. Explain the working principle, and characteristics of a photovoltaic cell with a neat diagram.

CO5 (9)

OR

16. Explain the construction and working principle of RTD with neat diagram.

CO5 (9)
