Reg No.: _____ Name : _____

JYOTHI ENGINEERING COLLEGE
LEAD KINDLY LIGHT
CREATING TECHNOLOGY LEADERS OF TOMORROW
ESTD 2007

Jyothi Engineering College(Autonomous)

B. Tech Degree S2 (R) Examination, May 2026(2025 Scheme)

25EET205 - MEASUREMENTS AND INSTRUMENTATION

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Total Mark: 60 **Total Time: 2hrs 30 min**

CO MARK

PART A

(Answer All Questions. Each question carries 3 marks)

1. Define resolution of a measuring instrument and explain how it affects measurement accuracy. CO1 (3)
2. Write the torque equation of a PMMC type instrument and state each term. CO2 (3)
3. Define retentivity and coercivity of a magnetic material. CO3 (3)
4. Write a short note on LCR Meter. CO3 (3)
5. Why does creeping occur in an induction type energy meter and how can it be prevented? CO4 (3)
6. List the advantages of smart energy meters over conventional energy meters. CO4 (3)
7. What is the function of a transducer in an instrumentation system? CO5 (3)
8. List any three major challenges in the implementation of Phasor Measurement Units (PMUs). CO5 (3)

PART B

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

Module - 1

9. Derive the torque equation of a moving iron instrument and show that its deflection is proportional to the square of the current. CO2 (9)

OR

10. Classify measuring instruments based on their function and method of measurement. Explain each category with examples. CO1 (9)

Module - 2

11. Draw the circuit of a DC bridge used for the measurement of medium resistance. Obtain the condition for zero deflection of the galvanometer. CO3 (9)

OR

12. Explain the construction, working, and applications of a Q meter. CO3 (9)

Module - 3

13. With the help of a neat block diagram, explain the construction and working of a digital energy meter. CO4 (9)

OR

14. Explain the construction and working of a two-element energy meter used for three-phase power measurement with neat diagram. CO4 (9)

Module - 4

15. Describe the working principle of an ultrasonic flow meter with neat diagram. CO5 (9)

OR

16. Explain the construction and working principle of RTD with neat diagram. CO5 (9)

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