

2123

B.E. (EEE), First Semester
EEEC-101: Electrical Measurements and Instrumentation

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

- a) Derive the dimensional equation for current in EM system.
- b) What are recording indicating instruments?
- c) Give the difference between shunts and multipliers?
- d) What are ratio and phase angle errors?
- e) What are different test for testing magnetic materials? (5x2)

UNIT - I

- II. a) Distinguish between International standard, Primary standard, Secondary standard and working standard?
b) Calculate the current flowing through the insulation resistance of a standard cell that has a internal resistance of 800Ω and voltage rating of 5V. There is insulation resistance between its terminals which is $1M\Omega$. (10)
- III. Give the construction and working of PMMC. List the applications of DC potentiometers. (10)
- IV. Describe the working of self balancing potentiometer with the help of a diagram for measurement of temperature using a thermocouple. (10)

UNIT - II

- V. What are the precautions and techniques used to reduce errors in bridges? Explain how a Wein bridge is used to determine the frequency. (10)
- VI. Explain the method of reversals for experimental determination of hysteresis loop of a magnetic specimen? (10)
- VII. Write a note on Instrument transformers? List the characteristics of CTs and PTs.(10)

x-x-x