(10)

Exam.Code:0906
Sub. Code: 6680

1059

B.E. (Electrical and Electronics Engineering)
Second Semester
EE-E201: Electrical Measurement and Instrumentation

Time allowed: 3 Hours Max. Marks: 50

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

x-x-x

I. Attempt the following:-

a) What is a MKS and rationalized MKS system?

b) Sketch the curve showing deflection versus time.

c) Write the general equation for bridge balancing?

d) What are permeameters?

e) What are the characteristics of PT and CT? (5x2)

UNIT – I

II. a) Derive the dimensions of EMF, permeability and magnetic flux density.
b) A standard cell has a voltage rating of 2.02V and internal resistance of 300 Ω. The insulation resistance between its terminals is 5M Ω Calculate the current flowing through the insulation resistance? (10)

III. Describe the different methods of producing controlling torque in analog indicating instruments. List their advantages and disadvantages. (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. For a Wheatstone bridge, if P = Q = 200 Ω, R = S = 150 Ω and if the battery emf is 10V with negligible internal resistance then, determine the sensitivity of bridge in terms of deflection pu change in resistance. The galvanometer G has current sensitivity of 15mm/μA and internal resistance of 200 Ω. Also mention certain precautions that can be taken to reduce errors in bridge calculations? (10)

VI. How magnetic materials are tested? Discuss the measurement of flux density and plotting of B-H curve. (10)

VII. Write a note on Instrument transformers? (10)

x-x-x