Exam.Code:0905
Sub. Code: 33263

2076

B.E. (Electrical and Electronics Engineering)

First Semester

EEEC-101: 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) Why are standards of measurement necessary?

b) Why does PMMC produce zero average torque on AC?

c) Differentiate between DC bridges and AC bridges.

d) List the limitations of a flux meter?

e) Why are instrument transformers preferred over shunts and multipliers? (5x2)

UNIT - I

II. Explain the hierarchy of measurement standards in detail. (10)

III. Explain the construction and working principle of a dynamometer type instrument. Explain its advantages and disadvantages. (10)

IV. Explain a potentiometer for measuring temperature through a thermocouple? (10)

UNIT - II

V. (a) A Kelvin Double Bridge measures a resistor of approximately 0.005Ω. Calculate the unknown resistance if ratio arms are equal.

b) Compare Wheatstone Bridge and Kelvin Double Bridge. (5x2)

VI. Draw and explain the B-H curve? Why it is nonlinear? Also give reasons that why is demagnetisation necessary before plotting the initial B–H curve? (10)

VII. Derive the transformation ratio equation of a Current Transformer. Explain the difference between nominal ratio and actual ratio and also discuss the factors responsible for ratio error. (10)

x-x-x