SE – Sem – III (Old) Electrical – EMM I 16/12/16

Q. P. Code : 542700

Duration: 3 hrs **(Old Course)** **Total Marks: 100**

Note :- 1. Question .No. **1 is compulsory**.
2. Solve any **four questions** from remaining six questions.
3. Assume suitable data and state it clearly.
4. Each question is for 20 marks.

Q1) Solve any four 20
a. State the advantages and disadvantages of flux meter.
b. Explain why the Wheatstone bridge is not used for measuring low value of resistance.
c. Compare spring controlled and gravity controlled method to produce the controlling torque.
d. Explain how wattmeter is calibrated by using d.c. potentiometer.
e. Briefly explain about the limiting error. Derive an expression for relative limiting error.

Q2)
a. Explain theory, working principal and construction of Ballistic galvanometer. 10
b. What are the different difficulties encountered in the measurement of high resistance? Explain how these difficulties are overcome. 10

Q3)
a. Explain Hay's bridge for measuring self inductance. Draw neat circuit and phasor diagram. Derive expression for self inductance 10
b. Derive the dimensions of charge, current, potential difference (emf), capacitance, resistance and inductance in Electrostatic System. 10

Q4)
a. Explain how B-H curve is determined by method of Reversal. 10
b. Explain with neat diagram the application of d.c. potentiometer. What is meant by standardization of dc potentiometer ? 10

Q5)
a. With equivalent circuit and phasor diagram explain the operation of potential transformer. What is the significance of ratio error and phase angle error? 10
b. Explain the construction and working of Electrodynamometer type wattmeter. Also derive the equation for deflection. 10

Q6)
a. Explain the construction and working of PMMC type instrument. 10
b. Explain Schering Bridge with neat diagram and phasor diagram. 10

Q7) Write short note on any two. 20
A. Reed type frequency meter. **B. A.C. Vibration Galvanometer.**
C. Magnetic dipole moment of current

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