Con. 5541–13. **(OLD COURSE)** **LJ–10352**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory**.
(2) Solve any **four** questions out of remaining **six** questions.
(3) **Each** question carries **20** marks.

1. Solve any **four** :–
   (a) Explain ac power loss measurement in sheet steel using Epstein square method.
   (b) What do you mean by creeping of energy meter ? Explain its method of reduction.
   (c) State the advantages and disadvantages of flux meter.
   (d) Define limiting error. Derive an expression for relative limiting error.
   (e) Explain standardization of potentiometer.

2. (a) Derive the dimensions of charge, current, potential difference (emf), capacitance, resistance and inductance in electrostatic system of units.
   (b) Derive the equation of balance for an Anderson's bridge. Draw the phasor diagram for condition underbalance. Discuss the advantage and disadvantage of the bridge.

3. (a) Explain with neat circuit diagram of d.c. potentiometer and state it's applications.
   (b) Explain the construction and working of a vibration galvonometer. Explain the term 'tuning' and discribe, how a vibration galvanometer is tuned.

4. (a) Explain with neat circuit and phasor diagram, the schering bridge for the measurement of capacitance and its dissipation factor.
   (b) Describe the construction and working of pmmc instruments. Derive the equation for deflection if the instrument is spring controlled.

5. (a) Explain with circuit diagram and plot for determination of B-H curve using step by step method.
   (b) Explain diamagnetism, paramagnetism and ferromagnetism in connection with magnetic measurements.

6. (a) Explain the construction of Electrodynamic type wattmeter and justify that at balance, deflection is proportional to power being measured.
   (b) Explain CT for measurement of current and power. Also define ratio and phase angle errors for CT.

7. Write a shor notes :–
   (a) Westorn type synchroscope
   (b) Power factor meter.

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