1. Explain the terms "accuracy", "sensitivity" and "resolution" as used for indicating instruments

2. What is meant by the term 'unit' in the measurement? Define "fundamental units" and "derived units". Give examples of each.

3. What is the difference between primary and secondary standards?

4. What are the instrumental, environmental and observational errors? Briefly explain about each one of them.

5. The measured value of a capacitor is 205.3μF, whereas its true value is 201.4μF. Determine the relative error.

6. Show that dimensions of product of voltage and current are dimensions of power.

7. The moving coil of a PMMC instrument has 125 turns and is of dimensions 4 cm x 2.5 cm. The flux density in the air-gap is 0.06 T. Determine the deflection when the coil carries a current of 25 mA. The spring control provides a deflection of one degree for a torque of 25×10^{-7} Nm.

8. Explain the use of shunt as a device for extending the range of ammeters. What are the advantages of shunt?

9. Explain the construction and working of PMMC instrument with proper diagram.

10. List the three torques involved in the moving system of a deflection instrument and explains the function of each torque. How are these torques produced in PMMC instruments?

11. How PMMC meter can be converted into an ammeter? Explain with circuit diagram.

12. How PMMC meter can be converted into a voltmeter? Explain with circuit diagram.

13. A moving coil galvanometer gives a deflection of 150 mm on a scale distant 2.5 m for a current of 2.5 μA. The resistance of the moving coil of galvanometer is 250 Ω. Determiner current sensitivity, voltage sensitivity, megohm sensitivity and the deflection produced in radians by a current of 5 μA.

14. The coil of a measuring instrument has a resistance of 1 Ω and the instrument has a full-scale deflection of 250 V when a resistance of 4999 Ω is connected in series with it, find

    (i) The current range of the instrument when used as an ammeter with the coil connected across a shunt of $\frac{1}{4999}$ Ω.

    (ii) The value of the shunt resistance for the instrument to give a full-scale deflection of