Q.1) When the balance point is obtained in the potentiometer, a current is drawn from
(i) (a) Both the cells & auxilliary battery  (b) Cell only
    (c)Auxillary battery only  (d)Neither cell nor auxilliary battery

(ii) Potential gradient K remains constant until,
    (a) Current in potentiometer wire remain constant
    (b) P.D. across potentiometer wire remain constant
    (c) Emf of the testing cell remain constant
    (d) None of the above

(iii) If the potential gradient in the wire is reduced balance point will be
    (a) Obtained at greater length  (b) Obtained at smaller lengths
    (c) No charge  (d) Cannot say

(iv) In the Kelvin’s method, balancing point is obtained 40cm from right end. If resistance in the right gap is 60Ω, resistance of galvanometer is;
    (a) 40Ω  (b) 50Ω  (c) 60Ω  (d) 90Ω

Q.2) Why is potentiometer preferred over voltmeter in measuring the emf of a cell?

(ii) State any 2 source of error in Kelvin’s experiment to find resistance of Galvanometer.

(iii) Potential difference across a potentiometer wire of length 4m is 2V. Calculate potential gradient.
Q.3) State and explain principle of potentiometer.

Q.4) Explain construction & working of Postoffice box.

Q.5) A potentiometer wire has a length of 1.5m & resistance of 10Ω. It is connected in series with the cell of emf 4V & internal resistance 5Ω. Calculate the potential drop per cm of the wire.

Q.6) A 3V battery of internal resistance 1Ω is joined to a sliding wire of length 100cm & resistance 5Ω. A voltmeter which takes negligible current is connected across 60cm length of the wire. What is the reading in the voltmeter?

SECTION-C

Q.7) With the help of circuit diagram explain Kelvin’s method to find out resistance of a galvanometer.

Q.8) A potentiometer wire is 100cm long & a constant potential difference is maintained across it. Two cells are connected in series first to support one another then in opposite direction. The balance points are obtained at 50 cm and 10 cm from positive end. Find the ratio of emf of two cells. Also if e₂=2v find e₁.

SECTION- D

Q.9) With the help of circuit diagram explain the experiment to compare the emf of two cells using potentiometer (by direct method).