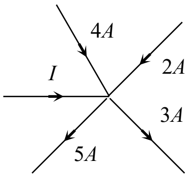
31. When the length and area of cross-section both are doubled, then its resistance
(1) Will become half
(2) Will be doubled
(3) Will remain the same
(4) Will become four times

32. In the given current distribution what is the value of I



(1) 3A
(2) 8 A
(3) 2A
(4) 5A

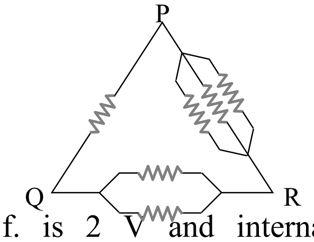
33. The potential difference between the terminals of a 6.0 V battery is 7.2 V when it is being charged by a current of 2.0 A. The internal resistance of the battery is
(1) 0.2 Ω (2) 0.4 Ω
(3) 0.6 Ω (4) 0.8 Ω

34. A cell of internal resistance r is connected to an external resistance R. The current will be maximum in R, if
(1) $R = r$ (2) $R < r$
(3) $R > r$ (4) $R = r/2$

35. A cell can be balanced against 110 cm and 100 cm of potentiometer wire respectively when in open circuit and in shorted through a resistance of 10 Ω. Find the internal resistance of the cell
(1) 2Ω
(2) 4Ω
(3) 1Ω
(4) 3Ω

Section B

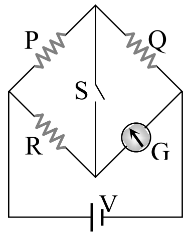
36. Six equal resistances are connected between points P, Q and R as shown in the figure. Then the net resistance will be maximum between



(1) P and Q
(2) Q and R
(3) P and R
(4) Any two points

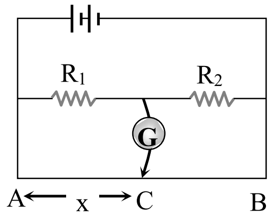
37. A cell whose e.m.f. is 2 V and internal resistance is 0.1Ω, is connected with a resistance of 3.9Ω. The voltage across the terminals of the cell will be
(1) 0.50 V
(2) 1.90 V
(3) 1.95 V
(4) 2.00 V

38. In the circuit shown $P \neq R$, the reading of the galvanometer is same with switch S open or closed. Then



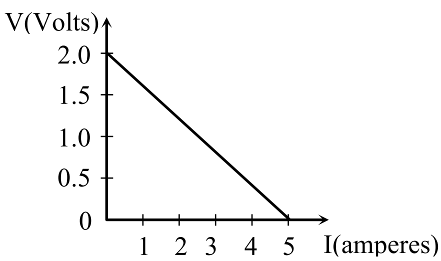
(1) $I_R = I_G$
(2) $I_P = I_G$
(3) $I_Q = I_G$
(4) $I_Q = I_R$

39. In the shown arrangement of the experiment of the meter bridge if AC corresponding to null deflection of galvanometer is x, what would be its value if the radius of the wire AB is doubled



(1) x
(2) x/4
(3) 4x
(4) 2x

40. For a cell, the graph between the potential difference (V) across the terminals of the cell and the current (I) drawn from the cell is shown in the figure. The e.m.f. and the internal resistance of the cell are



(1) $2V, 0.5\Omega$
(2) $2V, 0.4\Omega$
(3) $> 2V, 0.5\Omega$
(4) $> 2V, 0.4\Omega$