11. n identical cells each of e.m.f. E and internal resistance r are connected in series. An external resistance R is connected in series to this combination. The current through R is
(1) $\frac{nE}{R+nr}$ (2) $\frac{nE}{nR+r}$
(3) $\frac{E}{R+nr}$ (4) $\frac{nE}{R+r}$

12. When a resistance of 2 ohm is connected across the terminals of a cell, the current is 0.5 A. When the resistance is increased to 5 ohm, the current is 0.25 A. The e.m.f. of the cell is
(1) 1.0 V
(2) 1.5 V
(3) 2.0 V
(4) 2.5 V

13. In a potentiometer experiment the balancing with a cell is at length 240 cm. On shunting the cell with a resistance of 2 Ω, the balancing length becomes 120 cm. The internal resistance of the cell is
(1) 4 Ω
(2) 2 Ω
(3) 1 Ω
(4) 0.5 Ω

14. A cell of emf 6 V and resistance 0.5 ohm is short circuited. The current in the cell is
(1) 3 amp (2) 12 amp
(3) 24 amp (4) 6 amp

15. In an experiment of meter bridge, a null point is obtained at the centre of the bridge wire. When a resistance of 10 ohm is connected in one gap, the value of resistance in other gap is
(1) 10Ω (2) 5Ω
(3) $\frac{1}{5}\Omega$ (4) 500Ω

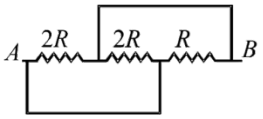
16. If in the experiment of Wheatstone's bridge, the positions of cells and galvanometer are interchanged, then balance points will
(1) Change
(2) Remain unchanged
(3) Depend on the internal resistance of cell and resistance of galvanometer
(4) None of these

17. In a potentiometer experiment two cells of e.m.f. E_1 and E_2 are used in series and in conjunction and the balancing length is found to be 58 cm of the wire. If the polarity of E_2 is reversed, then the balancing length becomes 29 cm. The ratio $\frac{E_1}{E_2}$ of the e.m.f. of the two cells is
(1) 1 : 1 (2) 2 : 1
(3) 3 : 1 (4) 4 : 1

18. A uniform metallic wire has a resistance of 18 Ω and is bent into an equilateral triangle. Then, the resistance between any two vertices of the triangle is
(1) 12 Ω
(2) 8 Ω
(3) 2 Ω
(4) 4 Ω

19. A steady current flows in a metallic conductor of non-uniform cross-section. The quantity/quantities constant along the length of the conductor is/are
(1) current, electric field and drift speed
(2) drift speed only
(3) current and drift speed
(4) current only

20. The equivalent resistance between points A and B of the circuit given below is…….



(1) $\frac{R}{2}$ (2) 2R
(3) 5R (4) 3R