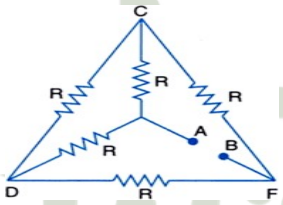
12. For measuring voltage of any circuit, potentiometer is preferred to voltmeter because
    (a) the potentiometer is cheap and easy to handle.
    (b) Calibration in the voltmeter is sometimes wrong.
    (c) The potentiometer almost draws no current during measurement.
    (d) Range of the voltmeter is not as wide as that of the potentiometer.
13. In the experiment of potentiometer, at balance point, there is no current in the
    (a) main circuit
    (b) potentiometer circuit
    (c) galvanometer circuit
    (d) both main and galvanometer circuits
14. Sensitivity of potentiometer can be increased by
    (a) increasing the E.m.f of the cell
    (b) increasing the length of the potentiometer
    (c) decreasing the length of the potentiometer wire
    (d) None of these
15. A cell has emf 2.8 V. It is connected to an external resistance of 5Ω. What will be the potential difference across the terminal of the cell, if its internal resistance is 2Ω.
    (a) 0.28 V
    (b) 2V
    (c) 1.4V
    (d) 2.5V
16. Find the equivalent resistance between a and b



    (a) R/4 (b) R/2 (c) R (d) 2R
17. A moving coil galvanometer can be converted into an ammeter by connecting to the moving coil galvanometer
    (a) A low resistance in series
    (b) A high resistance in series
    (c) A low resistance in parallel
    (d) A high resistance in parallel
18. A moving coil galvanometer can be converted into an ammeter by connecting to the moving coil galvanometer
    (a) A low resistance in series
    (b) A high resistance in series
    (c) A low resistance in parallel
    (d) A high resistance in parallel
19. The emf of battery A is balanced by a length of 75 cm on a potentiometer wire. The standard cell of emf 1.02 V is balanced by a length of 50 cm. The emf of cell A is,
    (a) 1.25 V (b) 1.35 V (c) 1.53 V (d) 2.05 V
20. AB is a wire of potentiometer with the increase in the value of resistance R, the shift in the balance point J will be
    (a) Towards
    (b) Towards A
    (c) Remains constant
    (d) First towards B then back towards A.
21. A potentiometer wire consists of a wire of length 4m and resistance 10 ohm. It is connected to a cell of emf 2V. The potential gradient of the wire is,
    (a) 0.5 V/m (b) 2 V/m (c) 5 V/m (d) 10 V/m
22. From the given diagram, Using Kirchhoff's law, the value and actual direction of current I_x is:

    (a) 2A and towards O
    (b) -2A and same as in figure
    (c) 2A and same as in figure
    (d) -2A and towards O