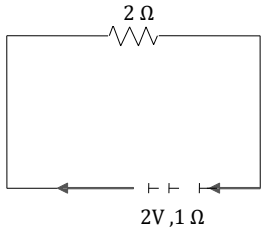
DPP
DAILY PRACTICE PROBLEMS

CLASS : XIITH **SUBJECT : PHYSICS**
DATE : **DPP NO. : 1**

Topic :- Current Electricity

1. In the electric circuit shown each cell has an emf of 2V and internal resistance of 1Ω. The external resistance is 2Ω. The value of the current I is(in ampere)

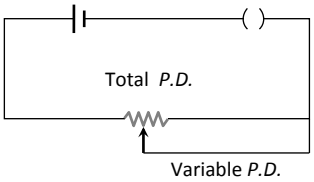


a) 2 b) 1.25 c) 0.4 d) 1.2

2. A, B, C and D are four resistances of 2Ω, 2Ω, 2Ω and 3Ω respectively. They are used to form a Wheatstone bridge. The resistance D is short circuted with a resistances R in order to get the bridge balanced. The value of R will be

a) 4 Ω b)6 Ω c)8 Ω d) 3 Ω

3. The arrangement as shown in figure is called as



a) Potential divider b) Potential adder
c) Potential substracter d) Potential multiplier

4. If the balance point is obtained at the 35^{th} cm in a meter bridge, the resistances in the left and right gaps are in the ratio of

a) 7 : 13 b) 13 : 7 c) 9 : 11 d) 11 : 9

5. Two electric bulbs rated P_1 watt V volts and P_2 watt V volts are connected in parallel and V volts are applied to it. The total power will be

a) $P_1 + P_2 watt$ b) $\sqrt{P_1 P_2}\, watt$ c) $\frac{P_1 P_2}{P_1 + P_2} watt$ d) $\frac{P_1 + P_2}{P_1 P_2} watt$

6. In a meter bridge a 30Ω resistance is connected in the left gap and a pair of resistances P and Q in the right gap. Measured from the left, the balance point is 37.5 cm, when P and Q are in series and 71.4 cm when they are parallel. The values of P and Q (in ohm) are
a) 40, 10 b) 35, 15 c) 30, 20 d) 25, 25

7. In an experiment to measure the internal resistance of a cell by potentiometer, it is found that the balance point is at a length of $2m$ when the cell is shunted by a 5Ω resistance; and is at a length of $3m$ when the cell is shunted by a 10Ω resistance. The internal resistance of the cell is, then
a) 1.5Ω b) 10Ω c) 15Ω d) 1Ω

8. Two electroplating cells, one of silver and another of aluminium are connected in series. The ratio of the number of silver atoms to that of aluminium atoms deposited during time t will be
a) 1 : 3 b) 3 : 1 c) 1 : 9 d) 9 : 1

9. A coil of wire of resistance 50 Ω is embedded in a block of ice and a potential difference of 210 V is applied across it. The amount of ice which melts in 1 sec is
a) 0.262 g b) 2.62 g c) 26.2 g d) 0.0262 g

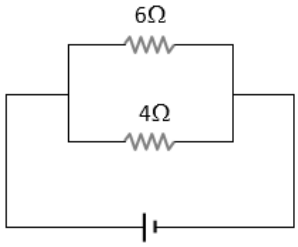
10. The resistance of 1 A ammeter is 0.018Ω. To convert it into 10 A ammeter, the shunt resistance required will be
a) 0.18 Ω b) 0.0018 Ω c) 0.002 Ω d) 0.12 Ω

11. When current flows through a conductor, then the order of drift velocity of electrons will be
a) $10^{10} m/sec$ b) $10^{-2} cm/sec$ c) $10^{4} cm/sec$ d) $10^{-1} cm/sec$

12. Which of the following statements is wrong
a) Voltmeter should have high resistance
b) Ammeter should have low resistance
c) Ammeter is placed in parallel across the conductor in a circuit
d) Voltmeter is placed in parallel across the conductor in a circuit

13. A material B has twice the specific resistance of A. A circular wire made of B has twice the diameter of a wire made of A. Then for the two wires to have the same resistance, the ratio l_B/l_A of their respective lengths must be
a) 1 b) 1/2 c) 1/4 d) 2

14. In the circuit shown below, the power developed in the 6Ω resistor is 6 watt. The power in watts developed in the 4Ω resistor is



a) 16 b) 9 c) 6 d) 4

15. The value of internal resistance of an ideal cell is

a) Zero b) 0.5 Ω c) 1 Ω d) Infinity

16. If the electronic charge is 1.6×10^{-19} C, then the number of electrons passing through a section of wire per second, when the wire carries a current of 2 A is

a) 1.25×10^{17} b) 1.6×10^{17} c) 1.25×10^{19} d) 1.6×10^{19}

17. Two bulbs are working in parallel order. Bulb A is brighter than bulb B. If R_A and R_B are their resistance respectively then

a) $R_A > R_B$ b) $R_A < R_B$ c) $R_A = R_B$ d) None of these

18. The amount of chlorine produced per-second through electrolysis in a plate which consumes 100 KW power at 200 V is (Given, electrochemical equivalent of chlorine $= 0.367 \times 10^{-3} gC^{-1}$)

a) 18.35 g b) 1.835 g c) 183.5 g d) 0.1835 g

19. Three resistors each of 2 $o\text{h}m$ are connected together in a triangular shape. The resistance between any two vertices will be

a) $4/3 o\text{h}m$ b) $3/4\ o\text{h}m$ c) $3\ o\text{h}m$ d) $6\ o\text{h}m$

20. Two different conductors have same resistance at 0°C. It is found that the resistance of the first conductor at t_1°C is equal to the resistance of the second conductor at t_2°C. The ratio of the temperature coefficients of resistance of the conductors, $\frac{\alpha_1}{\alpha_2}$ is

a) $\frac{t_1}{t_2}$ b) $\frac{t_2 - t_1}{t_2}$ c) $\frac{t_2 - t_1}{t_1}$ d) $\frac{t_2}{t_1}$