DPP

DAILY PRACTICE PROBLEMS

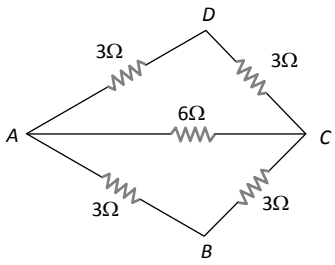
CLASS : XIITH **SUBJECT : PHYSICS**

DATE : **DPP NO. : 3**

Topic :- Current Electricity

1. For which of the following the resistance decreases on increasing the temperature
   a) Copper b)Tungsten c)Germanium d)Aluminium

2. The effective resistance between the points *A* and *B* in the figure is

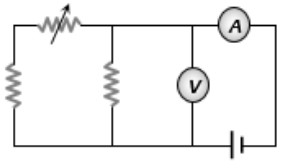


   a) 5Ω b) 2Ω c) 3Ω d) 4Ω

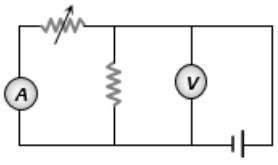
3. How much energy in kilowatt hour is consumed in operating ten 50 watt bulbs for 10 hours per day in a month (30 days)
   a) 1500 b) 5,000 c) 15 d) 150

4. Express which of the following setups can be used to verify Ohm's law

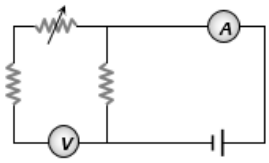
a)

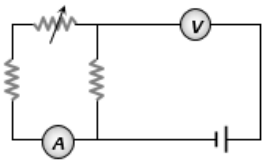


b)



c)



d) 

5. If in a voltaic cell, 5 g of zinc is consumed, we will get how many ampere hour (given that ECE of zinc is $3.38 \times 10^{-7} kgC^{-1}$)

a) 2.05 b) 8.2 c)4.1 d) $5 \times 3.338 \times 10^{-7}$

6. The resistance of a conductor is 5 ohm at 50°C and 6 ohm at 100°C. Its resistance at 0°C is

a) 1 ohm b)2 ohm c)3 ohm d)4 ohm

7. A metallic wire of resistance 12 Ω is bent to from a square. The resistance between two diagonal points would be

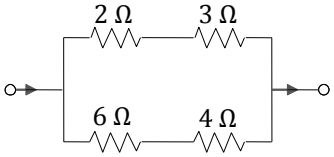
a) 12 Ω b) 24 Ω c) 6 Ω d) 3 Ω

8. A piece of metal weighing 200 g is to be electroplated with 5% of its weight in gold. How long it would take to deposits the required amount of gold, if the strength of the available current is 2 A?

(Given, electrochemical equivalent of $H = 0.0104 \times 10^{-4}$ gC^{-1} atomic weight of gold = 197.1, atomic weight of hydrogen = 1.008)

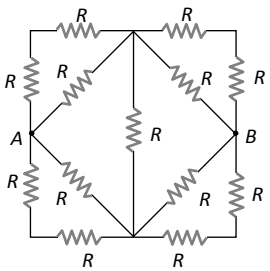
a) 7347.9 s b)7400.5 s c) 7151.7 s d) 70 s

9. In the circuit shown in figure, the heat produced by the 6 Ω resistance is 60Ω cal s^{-1}. What heat per second is produced across 3Ω resistance?



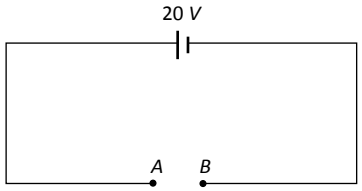
a) 30 cal b) 60 cal c) 100 cal d) 120 cal

10. Thirteen resistance each of resistance R ohm are connected in the circuit as shown in the figure below. The effective resistance between A and B is



a) $2R$ Ω b) $\frac{4R}{3}$ Ω c) $\frac{2R}{3}$ Ω d) R Ω

11. In the shown circuit, what is the potential difference across A and B



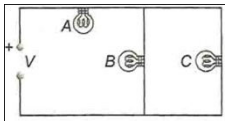
a) $50\ V$ b) $45\ V$ c) $30\ V$ d) $20\ V$

12. The internal resistance of a cell is the resistance of
a) Electrodes of the cell b) Vessel of the cell
c) Electrolyte used in the cell d) Material used in the cell

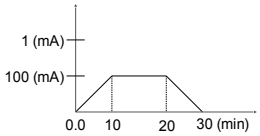
13. In potentiometer a balance point is obtained, when
a) The e.m.f. of the battery becomes equal to the e.m.f. of the experimental cell
b) The p.d. of the wire between the $+ve$ end to jockey becomes equal to the e.m.f. of the experimental cell
c) The p.d. of the wire between $+ve$ point and jockey becomes equal to the e.m.f. of the battery
d)The p.d. across the potentiometer wire becomes equal to the e.m.f. of the battery

14. A conductor wire having 10^{29} free electrons/m^3 carries a current of 20A. If the cross-section of the wire is $1mm^2$, then the drift velocity of electrons will be
a) $6.25 \times 10^{-3} ms^{-1}$ b) $1.25 \times 10^{-5} ms^{-1}$ c)$1.25 \times 10^{-3} ms^{-1}$ d)$1.25 \times 10^{-4} ms^{-1}$

15. Figure shown three similar lamps A,B and C connected across a power supply. If the lamp C fuses, how will the light emitted by A and B change?

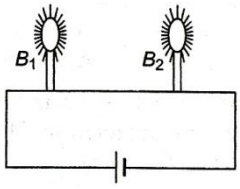


a) No change b) Brilliance of A decreases and that of B increases



c) Brilliance of both A and B increases d) Brilliance of both A and B decreases

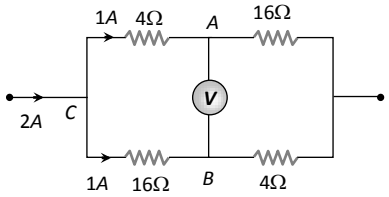
16. Bulb B_1 (100 W-250 V) and bulb B_2 (100 W-200 V) are connected across 250 V. What is potential drop across B_2?



a) 200 V b) 250 V c) 98 V d) 48 V

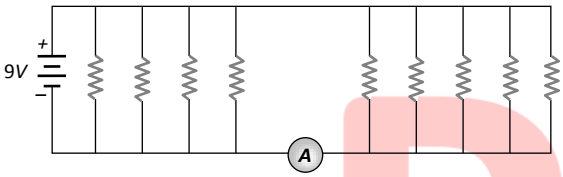
17. The amount of charge required to liberate 9 gm of aluminium (atomic weight =27 and valency = 3) in the process of electrolysis is (Faraday's number =96500 $coulombs/gm$ equivalent)
a) 321660 $coulombs$ b) 69500 $coulombs$ c) 289500 $coulomb$ d)96500 $coulomb$

18. In the circuit shown below, the reading of the voltmeter V is



a) 12 V b) 8 V c) 20 V d) 16 V

19. If each resistance in the figure is of 9 Ω then reading of ammeter is



a) 5 A b) 8 A c) 2 A d) 9 A

20. 160W-60V lamp is connected at 60 V DC supply. The number of electrons passing through the lamp in 1 min is (the charge of electron $e = 1.6 \times 10^{-19}$C)
a) 10^{19} b) 10^{21} c) 1.6×10^{19} d) 1.4×10^{20}