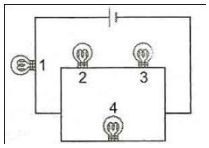
DPP
DAILY PRACTICE PROBLEMS

CLASS : XIITH **SUBJECT : PHYSICS**
DATE : **DPP NO. : 6**

Topic :- Current Electricity

1. All bulbs in figure, are identical. Which bulb lights brightly?



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

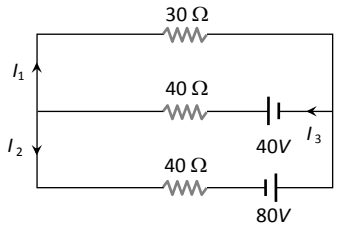
2. An ammeter gives full scale deflection when current 1.0 A is passed in it. To convert it into 10 A range ammeter, the ratio of its resistance and the shunt resistance will be
a) 1 : 9 b) 1 : 10 c) 1 : 11 d) 9 : 1

3. Same current is being passed through a copper voltmeter and a silver voltmeter. The rate of increase in weights of the cathode of the two voltmeters will be proportional to
a) Atomic masses b) Atomic number c) Relative densities d) None of the above

4. For measurement of potential difference, potentiometer is preferred in comparison to voltmeter because
a) Potentiometer is more sensitive than voltmeter
b) The resistance of potentiometer is less than voltmeter
c) Potentiometer is cheaper than voltmeter
d) Potentiometer does not take current from the circuit

5. The resistance of an ideal ammeter is
a) Infinite b) Very high c) Small d) Zero

6. In the given circuit the current I_1 is



a) 0.4 A b) - 0.4 A c) 0.8 A d) - 0.8 A

7. The chemical equivalent of copper and zinc are 32 and 108 respectively. When copper and silver voltmeters are connected in series and electric current is passed through for sometime, 1.6 g of copper is deposited. Then, the mass of silver deposited will be

a) 3.5 g b) 2.8 g c) 5.4 g d) None of these

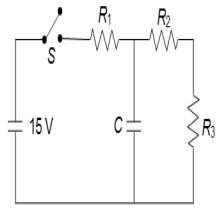
8. When current is passed in antimony-bismuth couple, then

a) The junction becomes hot when the current is from bismuth to antimony
b) The junction becomes hot when current flows from antimony to bismuth
c) Both junctions becomes hot
d) Both junctions becomes cold

9. The current inside a copper voltameter

a) Is half the outside value
b) Is the same as the outside value
c) Is twice the outside value
d) Depends on the concentration of $CuSO_4$

10. I - V characteristic of a copper wire of length L and area of cross-section A is shown in figure. The slope of the curve becomes



a) More if the experiment is performed at higher temperature
b) More if a wire of steel of same dimension is used
c) More if the length of the wire increased
d) Less if the length of the wire increased

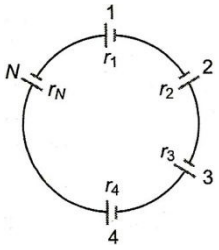
11. A heater of 220 V heats a volume of water in 5 min time. A heater of 110 V heats the same volume of water is

a) 5 min b) 8 min c) 4×10^4 min d) 20 min

12. Two wires having resistance of 2Ω and 4Ω are connected to same voltage. Ratio of heat dissipated at resistance is

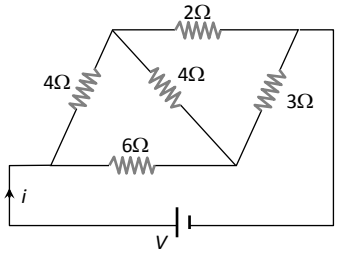
a) 1 :2 b) 4 :3 c) 2 :1 d) 5 :2

13. A group of N cells whose emf varies directly with the internal resistance as per the equation $E_N = 1.5r_N$ are connected as shown in the figure. The current I in the circuit is



a) 5.1A b) 0.51A c) 1.5A d) 0.15A

14. For the network shown in the figure the value of the current i is

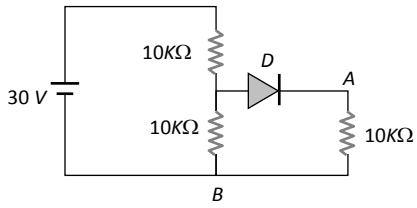


a) $\frac{9V}{35}$ b) $\frac{5V}{18}$ c) $\frac{5V}{9}$ d) $\frac{18V}{5}$

15. Which of the following is not a correct statement
a) Resistivity of electrolytes decreases on increasing temperature
b) Resistance of mercury falls on decreasing its temperature
c) When joined in series a 40 W bulb glows more than a 60 W bulb
d) Resistance of 40 W bulb is less than the resistance of 60 W bulb

16. For a certain thermocouple the emf is $E = aT + bT^2$, where t (in°C) is the temperature of hot junction, the cold junction is at 0°C. The value of contants a and b are 10×10^{-6} and 0.02×10^{-6} respectively, then the temperature of inversion (in°C) will be
a) 150 b) 250 c) 500 d) 750

17. In the given figure, potential difference between A and B is



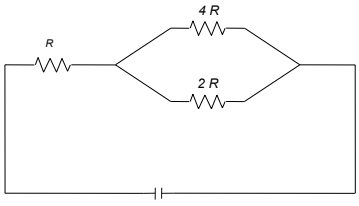
a) 0 b) 5 $volt$ c) 10 $volt$ d) 15 $volt$

18. A cell of emf E is connected across a resistance R. the potential difference between the terminals of the cell is found to be V volt. Then the internal resistance of the cell must be
a) (E-V) b) $\frac{(E-V)}{V}R$ c) $\frac{2(E-V)R}{E}$ d) $\frac{2(E-V)V}{R}$

19. Electric field (E) and current density (J) have relation

a) $E \propto J^{-1}$ b) $E \propto J$ c) $E \propto \frac{1}{J^2}$ d) $E^2 \propto \frac{1}{J}$

20. In a network as shown in the figure, the potential difference across the resistance $2R$ is (the cell has an emf of E volt and has no ingternal resistance)



a) $2E$ b) $\frac{4E}{7}$ c) $\frac{E}{7}$ d) E