



St. Lawrence High School
A Jesuit Christian Minority Institution



Term : Pre – Test

Work Sheet – 18

Class – X

Subject – Physical Science

Date – 17.06.20

Chapter – Current Electricity

Topic – Electric cell

Choose the correct option for the following questions.

$1 \times 15 = 15$

- For an ideal electric cell –
 - The emf is greater than its terminal voltage
 - The emf is equal to its terminal voltage
 - The internal resistance is zero
 - Both b. and c. are correct
- Emf of an electrical cell is the –
 - Potential appear across the external load
 - Potential drop across its internal resistance
 - Difference of potential at its two ends when it is open circuited
 - None of these
- For real electric cell –
 - Emf = Terminal voltage
 - Emf > Terminal voltage
 - Emf < Terminal voltage
 - Terminal voltage is = lost volt
- Lost volt is –
 - Potential appear across the external load
 - Potential drop across its internal resistance
 - Difference of potential at two ends of cell
 - None of these
- Choose the correct option of a real electric cell.
 - Emf = terminal voltage – lost volt
 - Emf = lost volt – terminal voltage
 - Terminal voltage = emf +lost volt
 - Terminal voltage = emf – lost vilt
- A battery of emf 15 volts and internal resistance 0.5 ohm is connected to an 11.5 ohm external resistance. The current through the external resistance will be –
 - 1.261 ampere
 - 7 ampere
 - 1.52 ampere
 - 1.25 ampere

7. For the above circuit the terminal voltage is –
- 15 volts
 - 14.375 volts
 - 14.625 volts
 - None of these
8. A 20 volt dc battery is connected to an external resistor of resistance 38 ohm. If the internal resistance of the battery is 2 ohm, then the lost volt is –
- 2.0 volt
 - 1.5 volt
 - 1.0 volt
 - 0.5 volt
9. An electric bulb is connected to a 12 volt dc battery of internal resistance 1 ohm. If the resistance of the bulb is 23 ohm, then what is the power dissipated through the bulb?
- 4.25 watt
 - 6 watt
 - 12 watt
 - 5.75 watt
10. In the above problem what is the power dissipated by the internal resistance of the battery?
- 12 watt
 - 2.3 watt
 - 0.25 watt
 - 0 watt
11. Keeping the resistance unchanged, if the current through a conductor is doubled and the time duration is halved, then the amount of heat generated will be –
- Doubled
 - Four times
 - Half
 - Four times
12. The SI unit of electric power and the correct relation relating it is –
- Watt, $\text{Watt} = \text{Coulomb} \times \text{time}$
 - Watt, $\text{Watt} = \text{Coulomb} \times \text{Volt}$
 - Watt, $\text{Watt} = \text{Ampere} \times \text{Volt}$
 - Joule, $\text{Joule} = \text{Coulomb} \times \text{Volt}$
13. A 4.2 ohm resistance is connected to a battery for 30 min. If the current through the resistance is 1 A, then the energy dissipated by the resistance is –
- 1800 Joule
 - 7560 joule
 - 7650 Joule
 - 8756 Joule

14. In the above problem the total heat produced by the resistance is –
- a. 7560 cal
 - b. 6570 cal
 - c. 5000 cal
 - d. 1800 cal
15. The power appear across a 10 ohm resistance is 160 watt. The current through the resistance is –
- a. 16 A
 - b. 6 A
 - c. 4 A
 - d. 1.6 A

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