St. Lawrence High School

A Jesuit Christian Minority Institution

Term : Pre – Test

Solution of 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. $1 \times 15 = 15$

1. For an ideal electric cell –
   a. The emf is greater than its terminal voltage
   b. The emf is equal to it's the terminal voltage
   c. The internal resistance is zero
   d. Both b. and c. are correct
   Ans: d. Both b. and c. are correct
2. Emf of an electrical cell is the –
   a. Potential appear across the external load
   b. Potential drop across its internal resistance
   c. Difference of potential at its two ends when it is open circuited
   d. None of these
   Ans: c. Difference of potential at its two ends when it is open circuited
3. For real electric cell –
   a. Emf = Terminal voltage
   b. Emf > Terminal voltage
   c. Emf < Terminal voltage
   d. Terminal voltage is = lost volt
   Ans: b. Emf > Terminal voltage
4. Lost volt is –
   a. Potential appear across the external load
   b. Potential drop across its internal resistance
   c. Difference of potential at two ends of cell
   d. None of these
   Ans: b. Potential drop across its internal resistance
5. Choose the correct option of a real electric cell.
   a. Emf = terminal voltage – lost volt
   b. Emf = lost volt – terminal voltage
   c. Terminal voltage = emf +lost volt
   d. Terminal voltage = emf – lost vilt
   Ans: d. Terminal voltage = emf – lost vilt
6. 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 –
   a. 1.261 ampere
   b. 7 ampere
   c. 1.52 ampere
   d. 1.25 ampere
   Ans: d. 1.25 ampere

7. For the above circuit the terminal voltage is –
    a. 15 volts
    b. 14.375 volts
    c. 14.625 volts
    d. None of these
    Ans: b. 14.375 volts
8. A 20 vlot 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 –
    a. 2.0 volt
    b. 1.5 volt
    c. 1.0 volt
    d. 0.5 volt
    Ans: c. 1.0 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?
    a. 4.25 watt
    b. 6 watt
    c. 12 watt
    d. 5.75 watt
    Ans: d. 5.75 watt
10. In the above problem what is the power dissipated by the internal resistance of the battery?
    a. 12 watt
    b. 2.3 watt
    c. 0.25 watt
    d. 0 watt
    Ans: c. 0.25 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 –
    a. Doubled
    b. Four times
    c. Half
    d. Four times
    Ans: a. Doubled
12. The SI unit of electric power and the correct relation relating it is –
    a. Watt, Watt = Coulomb x time
    b. Watt, Watt = Coulomb x Volt
    c. Watt, Watt = Ampere x Volt
    d. Joule, Joule = Coulomb x Volt
    Ans: c. Watt, Watt = Ampere x 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 –
    a. 1800 Joule
    b. 7560 joule
    c. 7650 Joule
    d. 8756 Joule
    Ans: b. 7560 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

    Ans: 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

    Ans: c. 4 A

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