ELECTRIC CURRENT

1 Mark Questions

1. Define potential difference (or) Voltage?

Ans: Work done by the electric force on unit positive charge to move it through a distance from one point to another point is called potential difference or voltage.

2 Define the word "emf"?

Ans: Work done by the chemical force to move unit positive charge from negative terminal to positive terminal of the battery.

3. State Ohm's law?

Ans: The potential difference between the ends of conductor is directly proportional to the electric current passing through it at a constant temperature.

4. Define Ohm

Ans: The potential difference between the ends of conductor is one volt, one ampere current passing through it, then the resistance of the conductor is one ohm.

5. What is meant by electric circuit?

Ans: A closed path created by the connecting wires through a battery along which electrons can flow is called a electric circuit.

6. Name the types of Kirchhoff's laws?

Ans: 1.Junction Law 2. Loop Law

7. What is multi meter?

Ans: A multi meter is an electric measuring instrument that combines several measurement functions in one unit.

8. Define ampere?

Ans: one coulomb charge crossing any cross section of the conductor in one second is known as one ampere.

9. What is the difference between resistance and resistor?

Ans:

Resistance	Resistor
The obstruction to the motion of the electrons in a conductor	The material which offers resistance to the motion of electrons

10. What is the value of 1KWH in joules?

Ans: 1 KWH=3.6×10^6 J

11. Define semiconductors and give examples?

Ans: The material which transfers charge partially from one place to another place is called semi-conductors. Examples are Silicon, Germanium

12. What is electric current? Write its units?

Ans: The amount of charge crossing any cross section of the conductor in one second. SI unit is ampere(A)

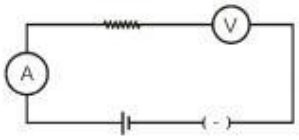
13. Define conductivity and write its units?

Ans: The reciprocal of resistivity is called conductivity. SI unit is $(\Omega\text{-m})^{-1}$

14. Define electric power? Write S.I. Units?

Ans: Electric power is the product of potential difference and the current. SI unit is watt(W)

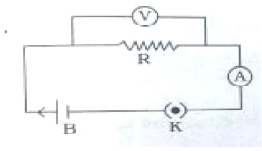
15. Ravi instructed to conduct an experiment to prove Ohm's law. He connected the apparatus as show below.



His teacher told him that there is an error in connecting apparatus.

Identiy the error in the above circuit.

Ans:



16. Calculate the no. of electrons constituting one coulomb of charge?

Ans: Magnitude of electric charge $=1.602\text{x}10^{-19}\text{C}$

No.of electrons constituting 1C of charge$=1/1.602\text{x}10^{-19}=6.25\text{x}10^{18}$

17. Name the instrument used to measure both electric current and potential difference?

Ans: Multi meter

18. When do you say that two or more resistors are connected is series?

Ans: The equivalent resistance of combination is more than the resistance of each of the resistors

19. When do you say that two or more resistors are connected in parallel?

Ans: The equivalent resistance of combination is less than the resistance of each of the resistors

20. What happens to the motion of electrons when the ends of the conductor connected to the battery?

Ans: The electric filed makes the electrons move in a specified direction.

21. What happens to the resistance of a conductor if we increase its length?

Ans: Resistance of a conductor also increases

22. Why does overload cause damage to electric appliances?

Ans: Due to overload the heat increases in the circuit and melts the parts of the appliances.

23. Why do electrons move in specified direction when battery is connected in the circuit?

Ans: A uniform electric filed is set up throughout the circuit.

24. What happens when one of the resistors in series breaks down.

Ans: The circuit becomes open and flow of current cannot take place on the circuit.

25. In the below figure, the potential at A is _____ when the potential at B is zero.

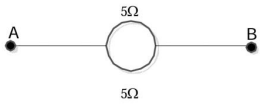
Ans: Potential at A=V

Potential at B=0

Potential difference between AB=5x1+2=V

V=7V

26. A wire of resistance 10Ω is bent in the form of a closed circle. What is the effective resistance between the points at the ends of any diameter of the circle?



Ans: 5Ω and 5Ω are in parallel

Effective resistance= 5x5/5+5=25/10=2.5Ω

27. You might have heard that the sentences like "this month we have consumed 100 units of current." What does "Unit" mean?

Ans: The unit of electric energy consumption is equal to 1 KWH.

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