

CBSE Class 10 – Electricity important question and answers part A -cbsephysics.com**1. What do you mean by electric charge?**

Answer: Electric charge is a physical property of matter that causes it to experience a force when placed in an electromagnetic field.

2. What do you mean by electric charge is conserved?

Electric charge is conserved, which means it can be neither created nor destroyed.

3. What do you mean by quantization of electric charge?

Electric charge is quantized, which means that the total electric charge of a body is an integral multiple of the charge of an electron. And the body has an electric charge in the form of discrete energy packets.

4. What do you mean by electric current?

The amount of electric charge flowing through any cross-section of a conductor in unit time is known as electrical current.

Electric current $I = Q/t$

S.I unit of electric current is Ampere (A).

5. How Voltmeter and Ammeter are connected in a circuit?

Voltmeter is always connected parallel to the circuit, but Ammeter is always connected series.

6. What do you mean by the least count of Ammeter?

Ans. The minimum value of electric current measured by an Ammeter is known as the least count of Ammeter.

Let us consider an ammeter 1-ampere current can measure which has a division 10 count. Then, the Least Count. of that Ammeter is $= 1/10 = 0.1 \text{ A}$

7. How does charge flows inside a wire conductor?

A conductor contains a large no. of free electrons, which can move randomly in all directions. If we connect a wire to a battery, the electrons will attract towards positive

ends of the battery. So we get net a flow of election with some drift velocity in a particular direction. This is how current flows inside a wire.

N.B. The direction of the electron is opposite to the direction of the electric current flowing in a conductor.

8. What do you mean by Electric potential?

Ans. The electric potential at a point is defined as the work done to move a unit charge from infinity to that point.

Electric potential (V) = W/q

Electric potential is a scalar quantity as it has no direction.

9. What are the differences between Ammeter and Voltmeter?

Ans. (1) Voltmeter measure the potential difference between two points of load resistance

An ammeter measures the electric current flowing through any circuit resistance register.

(2) Voltmeter is always connected in parallel with the circuit, but Ammeter is always connected in series with the circuit.

(3) The resistance of an ideal voltmeter is infinite, whereas the resistance of an ideal Ammeter is zero.

10. Why voltmeter have high resistance?

Ans. Voltmeter determines the potential difference between two points of load resistance. And we connected it parallelly. If we made a voltmeter a resistive device, then a maximum amount of current will be flow-through the voltmeter, and a small amount of current will flow through the load resistance. Due to low current through the load resistance, We will not get the desired potential across the load resistance.

11. Why Ammeter is connected in series, and it has low resistance?

Ans. Ammeter determines the current flow through a lead resistance. So we connect it in series with the circuit. If we made an Ammeter highly resistive, then a very small

amount of current will flow through the Ammeter and the load resistors. So we did not get the desired potential difference between two points of the load.

12. State ohms law and its mathematical form.

Ohms law states that the voltage or potential difference between two points is directly proportional to the amount of current passing through a resistance.

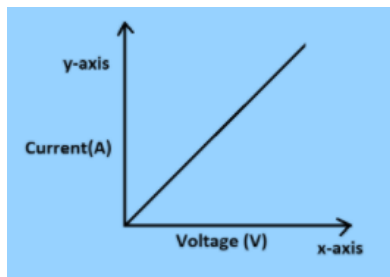
According to ohms law, $V = I \times R$

13. What do you mean by resistance?

Resistance is a property of a conductor that opposes the flow of electric current through it.

S.I unit of resistance is the ohm.

14. plot the current-voltage relationship (V–I) curve for a conductor.



15. What is the cause of resistance of a conductor?

A conductor has a large number of free electrons and atoms. When a potential is applied across a conductor, the free electrons move in a particular direction. During their movements, the electrons collide with the atoms and molecules of the conductors; their collision opposes the movement of free electrons and creates resistance in a wire which reduces the electric flow through a conductor.

16. On which factors resistance of a conductor depend on?

- a. The resistance of a conductor is directly proportional to the length of the conductor.
- b. Resistance of a conductor is inversely proportional to the area of the cross-sectional of the conductor.

c. Resistance of a conductor depends on the resistivity of the material by which the conductor is made of.

17. What do you mean by the resistivity of a conductor?

Specific resistivity of a conductor is defined as the resistance of a conductor per unit length and per unit cross-section area. It depends on the nature of the materials.

18. How the resistance of a conductor depends on temperature?

If we increase the resistance of a conductor, the atoms present in the conductor gain thermal energy and start to vibrate about its mean position. As a result, more free electrons collide with the atoms. So, the effective resistance of a conductor increases with an increase in temperature.

19. What do you mean by effective resistance of a circuit?

Equivalent Resistance - The total effective resistance of a circuit with a combination of resistances is known as an equivalent resistance of that circuit.

For any assistance contact us on – cbsephysicsupdate@gmail.com