

Question 1: Find the amount of electric charge flowing through the circuit if an electric current of 5 A is drawn by an electric appliance for 5 minutes.

Question 2: If a current of 2 amperes is drawn for 1 hour through the filament of a bulb, find the amount of electric charge flowing through the circuit.

Question 3: In how much time 6000 coulomb of electric charge will flow, if an electric current of 10 A is drawn through an electric motor?

Question 4: If an electric charge of 900 C flows through an electric bulb for half an hour, find the electric current drawn by the filament.

Question 5: If an electric charge of 15000 C flows through an electric iron for 5 minutes, find the electric current drawn by filament of electric iron.

Question 6: Calculate the work done if a charge of 5 C moving across two point having potential difference equal to 15 V.

Question 7: Calculate the work done to carry a charge of 3 C, if the potential difference between two points is 10 V.

Question 8: What potential difference is required to do 100 J of work to carry a charge of 10 C between two points?

Question 9: Calculate the potential difference between two points, if 1500 J of work is done to carry a charge of 50C from one point to other?

Question 10: 5000 J of work would is done to carry how much charge between two points having potential difference of 100 V?

Question 11: To carry how much charge between two points having potential difference equal to 220 V, 1760 J of work is done?

Question 12: Calculate the resistance if 5 A of electric current flows through a conductor having potential difference between two points is equal to 15 V.

Question 13: If the potential difference between the terminals of an electric motor is 220 V and an electric current of 5 A is flowing through it what will be the resistance of electric motor?

Question 14: An electric current of 15 A is flowing through an electric fan. If the potential difference between two terminals of electric fan is 240 V, what will be resistance?

Question 15: If the resistance of an electric iron is $48\ \Omega$ and an electric current of 5 A is flowing through it, what will be the potential difference between two terminals of electric iron.

Question 16: Calculate the potential difference between two points of a terminal, if an electric current of 10 A is flowing through it having resistance of $20\ \Omega$.

Question 17: If the resistance between two terminals of an electric heater is $15\ \Omega$ and an electric current of 15 A is flowing through it then what will be the voltage of electric current?

Question 18: What will be the resistivity of a metal wire of 2 m length and 0.6 mm in diameter, if the resistance of the wire is 50 Ω .

Question 19: The resistance of an electric wire of an alloy is 10 Ω . If the thickness of wire is 0.001 meter, and length is 1 m, find its resistivity.

Question 20: The resistivity of a metal wire is $10 \times 10^{-8} \Omega \text{ m}$ at 20°C. Find the resistance of the same wire of 2 meter length and 0.3 mm thickness.

Question 21: The area of cross section of wire becomes half when its length is stretched to double. How the resistance of wire is affected in new condition?

***Question 22:** If 20 C of charge pass a point in a circuit in 1 s, what current is flowing?

Question 23: A current of 4 A flows around a circuit for 10 s. How much charge flows past a point in the circuit in this time?

Question 24: What is the current in a circuit if the charge passing each point is 20 C in 40 s?

Question 25: If a potential difference of 10 V causes a current of 2 A to flow for 1 minute, how much energy is transferred?

Question 26: A radio set draws a current of 0.36 A for 15 minutes. Calculate the amount of electric charge that flows through the circuit.

Question 27: If the charge on an electron is 1.6×10^{-19} coulombs, how many electrons should pass through a conductor in 1 second to constitute 1 ampere current?

Question 28: The p.d. across a lamp is 12 V. How many joules of electrical energy are charged into heat and light when?

- (a) a charge of 1 C passes through it?
- (b) a charge of 5 C passes through it?
- (c) a current of 2 A flows through it for 10 s?

Question 29: In 10 s, a charge of 25 C leaves a battery, and 200 J energy of are delivered to an outside circuit as a result.

- (a) What is the p.d. across the battery?
- (b) What current flows from the battery?

Question 30: A flash of lighting carries 10 C of charge which flows for 0.01 s. What is the current? If the voltage is 10 MV, what is the energy?

Question 31: An electric heater is connected to the 230 V mains supply. A current of 8 A flows through the heater.

- (a) How much charge flows around the circuit each second?
- (b) How much energy is transferred to the heater each second?

Question 32: How many electrons are flowing per second past a point in a circuit in which there is a current of 5 amp?

Question 33: A resistance of 20 ohms has a current of 2 amperes flowing in it. What potential difference is there between its ends?

Question 34: A current of 5 amperes flows through a wire whose ends are at a potential difference of 3 volts. Calculate the resistance of the wire.

Question 35: A potential difference of 20 volts is applied across the ends of a resistance of 5 ohms. What current will flow in the resistance?

Question 36: When a 12 V battery is connected across an unknown resistor, there is a current of 2.5 mA in the circuit. Calculate the value of the resistance of the resistor.

Question 37: What p.d. is needed to send a current of 6 A through an electrical appliance having a resistance of 40 ohm?

Question 38: An electric room heater draws a current of 2.4 A from the 120 V supply line. What current will this room heater draw when connected to 240 V supply line?

Question 39: A p.d. of 10 V is needed to make a current of 0.02 A flow through a wire. What p.d. is needed to make a current of 250 mA flow through the same wire?

Question 40: A current of 200 mA flows through a 4 k Ω resistor. What is the p.d. across the resistor?

Question 41: A wire is 1.0 long, 0.2 mm in diameter and has a resistance of 10 Ω . Calculate the resistivity of its material?

Question 42: What will be the resistance of a metal wire of length 2 meters and area of cross-section $1.55 \times 10^{-6} \text{ m}^2$, if the resistivity of the metal be $8 \times 10^{-8} \Omega \text{ m}$?

Question 43: Calculate the resistance of a copper wire 1.0 km long and 0.50 mm diameter if the resistivity of copper is $1.7 \times 10^{-8} \Omega \text{ m}$?