

Electric Current, Electric Potential And Ohm's Law

Q.1. How much work is done when one coulomb of charge moves against a potential difference of one volt?

Q .2 By what other name is the unit joules/ coulomb called?

Q .3 Calculate the work done in moving a charge of 4 coulombs from a point of 220 volts to another point at 230 volts.

Q .4 Name the instrument which is used to measure potential difference. How it is connected in the circuit to measure potential difference between two points?

Q .5 which particles constitute the electric current in a metallic conductor ? what is the S I unit of electric current?

Q .6 Define electric current. Give the symbols of fixed resistance, a variable resistance, a cell and a battery. Draw a labeled diagram of an electric circuit.

Q .7 A simple electric circuit has a 12V battery and a resistor of resistance 30 ohm. What will be the current in the circuit?

Q .8 If 2.25×10^{20} electrons pass through a wire in one minute, find the magnitude of the current flowing through the wire.

Q .9 A potential difference of 3.2V is applied across a conductor of resistance $1K\Omega$. Find the number of electrons flowing through the conductor in five minutes.

Q .10 The potential difference applied to an x-ray tube is 15 KV and the current through it is 2.4mA. Then find the number of electrons striking the target per minute.

Q .11 The resistance of electric lamp filament is 230 ohms. The lamp is switched on when the line voltage is 115 volts. What is the current in the lamp circuit?

Q .12 when a 12V battery is connected across an unknown resistor, there is a current of 2.5mA in the circuit. Calculate the value of resistance of the resistor.

Q. 13 In 10s, a charge of 25C leaves a battery and 200J of energy are delivered to an outside circuit as a result

a) what is the potential difference across the battery?

b) what current flows from the battery?

Q .14 How many electrons are flowing per second pass a point in a circuit in which there is a current of 5A?

Q .15 Draw a circuit diagram to show how three bulbs can be lit from a battery so that two bulbs are controlled by the same switch, while the third bulb has its own switch.