

Learnzy Academy

Worksheet: Electricity

1. An electric iron of resistance $20\ \Omega$ takes a current of $5\ \text{A}$. Calculate the heat developed in $30\ \text{s}$.
2. Name a device that helps to maintain a potential difference across a conductor.
3. Compute the heat generated while transferring 96000 coulomb of charge in one hour through a potential difference of $50\ \text{V}$
4. How much energy is given to each coulomb of charge passing through a $6\ \text{V}$ battery?
5. Define the unit of current.
6. Calculate the resistance of a metal wire of length 2 meters and cross-sectional area 1.55×10^{-6} square meters, if the resistivity of the metal is 2.8×10^{-8} ohm meter.
7. Let the resistance of an electrical component remains constant while the potential difference across the two ends of the component decreases to half of its former value. What change will occur in the current through it?
8. List the factors on which the resistance of a conductor in the shape of a wire depends.
9. Why does the cord of an electric heater not glow while the heating element does?
10. Why are alloys commonly used in electrical heating devices ?
11. On what factors does the resistance of a conductor depend?
12. Calculate the resistivity of the material of a wire of length $1\ \text{m}$, radius $0.01\ \text{cm}$ and resistance $20\ \text{ohms}$.
13. Will current flow more easily through a thick wire or a thin wire of the same material, when connected to the same source? Why?
14. Why are metals good conductors of electricity whereas glass is a bad conductor of electricity ? Give reason.
15. A current of $1\ \text{A}$ is drawn by a filament of an electric bulb. Number of electrons passing through a cross section of the filament in 16 seconds would be roughly.
16. Name a device that you can use to maintain a potential difference between the ends of a conductor. Explain the process by which this device does so.
17. What are the advantages of connecting electrical devices in parallel with the battery instead of connecting them in series?
18. Why are coils of electric toasters and electric irons made of an alloy rather than a pure metal?
19. What is meant by saying that the potential difference between two points is $1\ \text{V}$?

20. What is the maximum resistance which can be made using five resistors each of $1/5 \Omega$?