

Science

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(Chapter 12)(Electricity)

Class - 10

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Question 1:

Name a device that helps to maintain a potential difference across a conductor.

Answer 1:

A cell, battery, power supply, etc. helps to maintain a potential difference across a conductor.

Question 2:

What is meant by saying that the potential difference between two points is 1 V?

Answer 2:

When 1 J of work is required to move a charge of 1 C from one point to another, then it is said that the potential difference between the two points is 1 V.

$$V = \frac{W}{Q}$$

$$1 \text{ V} = \frac{1 \text{ J}}{1 \text{ C}}$$

Question 3:

How much energy is given to each coulomb of charge passing through a 6 V battery?

Answer 3:

$$\text{Potential Difference} = \frac{\text{Work done}}{\text{Charge}}$$

$$\text{or } \text{Work done (or Energy)} = \text{Potential Difference} \times \text{Charge}$$

$$\text{So, Work done} = 6 \text{ Volt} \times 1 \text{ Coulomb} = 6 \text{ Joules}$$

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