CREST Olympiads

#CRESTInnovator

CREST Science Olympiad (CSO)
Worksheet for
Class 7

Topic

Electric Current and Electric Circuits

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Worksheet on Electric Current and Electric Circuits

1. **What would happen if a higher-rated fuse is used in a circuit?**

   a. The circuit would become safer
   b. The fuse would last longer
   c. The fuse would blow more frequently
   d. The current would flow more easily in the circuit

2. **Match the following types of cells with their characteristics:**

	Column I		**Column II**
1.	Primary Cell	A.	Small, round-shaped cell commonly used in watches and calculators.
2.	Secondary Cell	B.	Contains a chemical paste or gel instead of a liquid.
3.	Dry Cell	C.	Rechargeable and can be used multiple times.
4.	Button Cell	D.	Designed to be used once and cannot be recharged.

   a. 1:A, 2:B, 3:C, 4:D
   b. 1:B, 2:A, 3:D, 4:C
   c. 1:D, 2:C, 3:B, 4:A
   d. 1:C, 2:D, 3:B, 4:A

3. **A student wants to test the conductivity of different materials. Which of the following setups would be most suitable?**

   a. Connecting the materials in a series circuit
   b. Connecting the materials in a parallel circuit
   c. Using an electric switch to control the flow of current
   d. Observing the brightness of electric bulbs connected to the materials

4. **Which of the following is NOT a characteristic of LED bulbs compared to traditional incandescent bulbs?**

   a. More energy-efficient
   b. Produces less heat
   c. Durable and long-lasting
   d. Contains a filament

5. **In a series circuit, what happens to the brightness of bulbs if more bulbs are added while keeping the voltage constant?**

   a. The brightness of all bulbs increases.
   b. The brightness of all bulbs decreases.
   c. The brightness of each bulb remains the same.
   d. The bulbs start flickering.

Answer Key

1. d - A fuse is a safety device that is designed to break the circuit when the current exceeds its rated value. By using a higher-rated fuse in a circuit, it means that the fuse can handle a higher current before breaking the circuit. This allows more current to flow through the circuit without interruption, making it easier for the current to pass through.

2. c -
   Primary Cell: Designed to be used once and cannot be recharged.
   Secondary Cell: Rechargeable and can be used multiple times.
   Dry Cell: Contains a chemical paste or gel instead of a liquid.
   Button Cell: Small, round-shaped cell commonly used in watches and calculators.

3. b - In a parallel circuit, each material is connected separately to the power source, allowing independent current flow through each material. This setup is suitable for testing conductivity because it ensures that the materials are not influenced by each other and their individual conductivity can be accurately observed.

4. d - Contains a filament is NOT a characteristic of LED bulbs compared to traditional incandescent bulbs. LED bulbs do not rely on a heated filament to produce light, unlike incandescent bulbs.

5. b - In a series circuit, the total voltage of the power source is shared among all the bulbs connected in the circuit. Adding more bulbs increases the overall resistance in the circuit, causing a decrease in the current flowing through each bulb. As a result, the bulbs receive less current, leading to a decrease in brightness.

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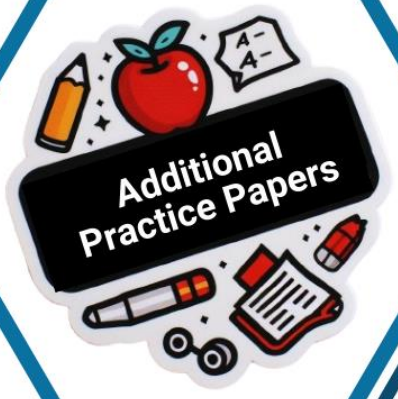

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