



BGS Vijnatham School

Worksheet – II (2026-27)

Chapter 3- Electricity: Circuits and their Components

Subject: Science

Step: VII

Name of Student

Case Based Questions:

Case 1: Nutrition and Health

Neha, a 13-year-old girl, has recently started menstruation. She feels weak and tired. Her doctor advises her to eat iron-rich foods like spinach and jaggery, and also foods rich in Vitamin B12.

Questions:

1. Why does Neha feel weak during menstruation?
2. Explain the importance of iron in adolescence.
3. How does Vitamin B12 deficiency affect the body?
4. Name one government scheme that supports adolescent girls with nutrition.

Case 2: Peer Pressure and Substance Abuse

Rahul, a 15-year-old boy, notices change in his body like deepening of voice and growth of facial hair. He feels pressured by friends to try smoking.

Questions:

1. What physical changes indicate Rahul is going through puberty?
2. Why is substance abuse particularly harmful during adolescence?
3. Explain how peer pressure can influence adolescent behaviour.
4. Suggest two healthy ways Rahul can cope with peer pressure.

Case 3: A simple circuit

Anita has a cell, a bulb, two wires, and a switch. She connects the bulb directly to the cell using only one wire and keeps the switch aside. The bulb does not glow. She wonders why the circuit is not working even though the cell and bulb are connected.

Questions:

1. Identify the mistake Anita made while connecting the circuit.
2. Explain why both terminals of the cell must be connected to the bulb.
3. How would adding the switch and the second wire help complete the circuit?
4. Draw a neat circuit diagram showing the correct arrangement.

Case 4: LED and Bulb

A school science exhibition team is comparing two types of bulbs: an incandescent bulb and an LED. They connect both bulbs to identical circuits with the same battery. They observe that the incandescent bulb glows brightly but becomes hot after a few minutes, while the LED glows steadily without heating up. The team also notices that the LED consumes less energy compared to the incandescent bulb.

Questions:

1. Why does the incandescent bulb become hot while the LED does not?
2. Explain how the working principle of an LED differs from that of an incandescent bulb.
3. Which bulb is more energy-efficient, and why?
4. In terms of lifespan and environmental impact, which bulb is preferable?
5. Draw a neat circuit diagram showing how an LED can be connected safely in a circuit.