

Chapter 10: Electric Current and Its Effects

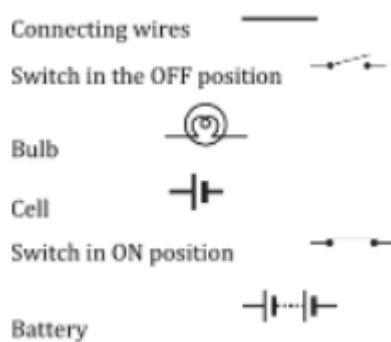
NCERT · Class 7 · Science

Exercise Questions

Question 1

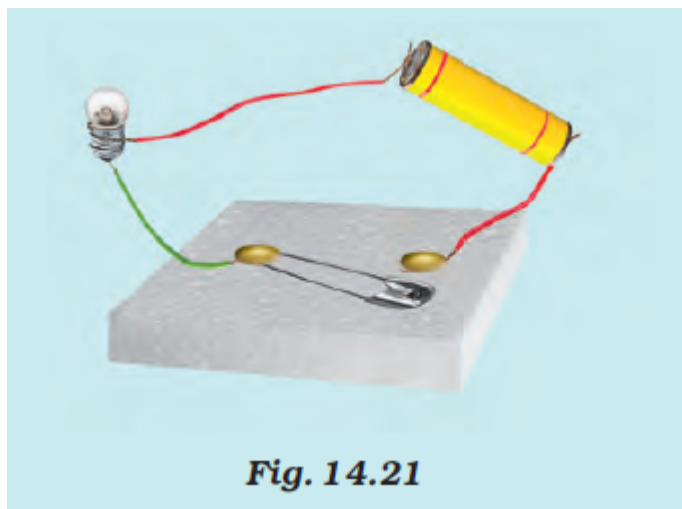
Draw in your notebook the symbols to represent the following components of electrical circuits: Connecting wires, switch in the 'OFF' position, bulb, cell, switch in the 'ON' position, and battery.

Solution

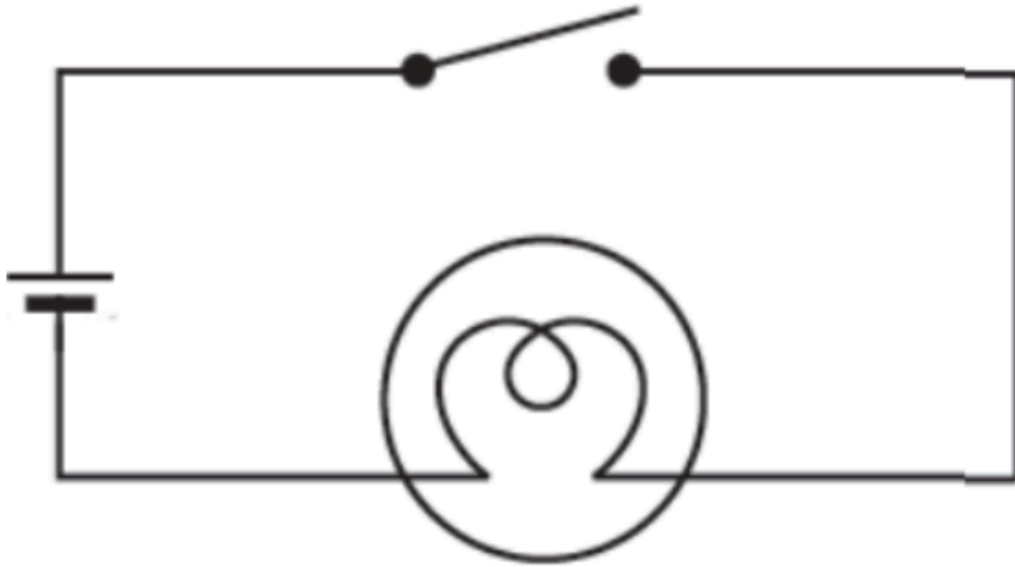


Question 2

Draw the circuit diagram to represent the circuit shown in Fig.14.21.

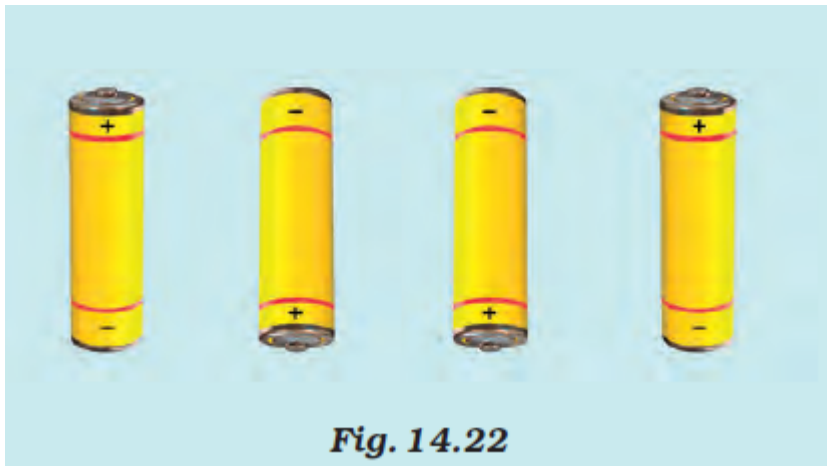


Solution

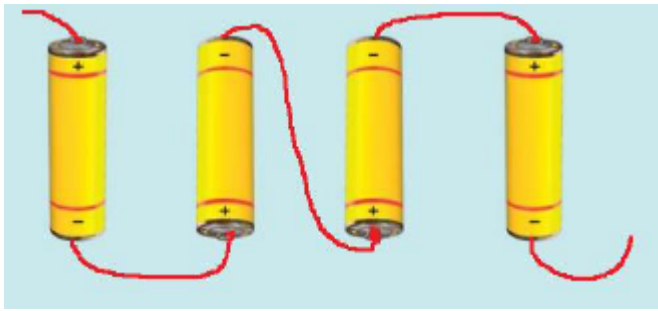


Question 3

Fig.14.22 shows four cells fixed on a board. Draw lines to indicate how you will connect their terminals with wires to make a battery of four cells.

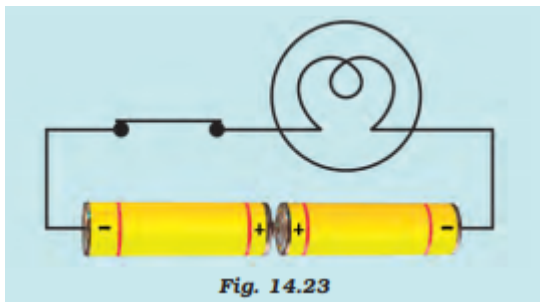


Solution



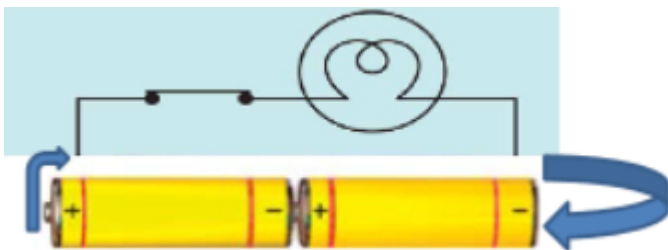
Question 4

The bulb in the circuit shown in Fig.14.23 does not glow. Can you identify the problem? Make necessary changes in the circuit to make the bulb glow.



Solution

In the circuit above, the bulb is connected on either side.



Question 5

Name any two effects of electric current.

Solution

i) Heating effect of electric current

ii) Magnetic effect of electric current

Question 6

When the current is switched on through a wire, a compass needle kept nearby gets deflected from its north-south position. Explain.

Solution

When the current is switched on through a wire, the magnetic field is created around it hence we see deflection in the compass needle kept nearby.

Question 7

Will the compass needle show deflection when the switch in the circuit shown by Fig.14.24 is closed?

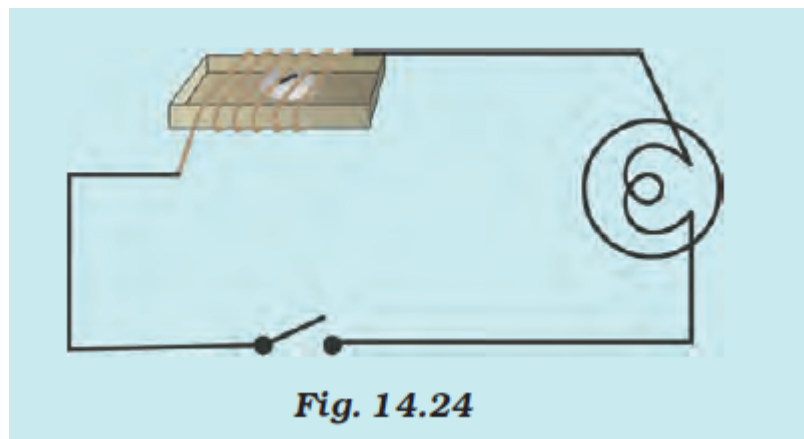


Fig. 14.24

Solution

No, the compass needle does not show deflection when the circuit is closed, and the magnetic field is not created until the current is flowing through the circuit.

Question 8

Fill in the blanks:

- (a) Longer line in the symbol for a cell represents its _____ terminal.
- (b) The combination of two or more cells is called a _____.
- (c) When the current is switched 'on' in a room heater, it _____.
- (d) The safety device based on the heating effect of electric current is called a _____.

Solution

- (a) Longer line in the symbol for a cell represents its **positive** terminal.
 - (b) The combination of two or more cells is called a **battery**.
 - (c) When the current is switched 'on' in a room heater, it **produces heat**.
 - (d) The safety device based on the heating effect of electric current is called a **fuse**.
-

Question 9

Mark 'T' if the statement is true and 'F' if it is false:

- (a) To make a battery of two cells, the negative terminal of one cell is connected to the negative terminal of the other cell. (T/F)
- (b) When the electric current through the fuse exceeds a certain limit, the fuse wire melts and breaks. (T/F)
- (c) An electromagnet does not attract a piece of iron. (T/F)
- (d) An electric bell has an electromagnet. (T/F)

Solution

- a) False
 - b) True
 - c) False
 - d) True
-

Question 10

Do you think an electromagnet can be used for separating plastic bags from a garbage heap? Explain.

Solution

No, because plastic does not have the magnetic property to get attracted to a magnet; hence magnet cannot be used to separate plastic bags.

Question 11

An electrician is carrying out some repairs in your house. He wants to replace a fuse with a piece of wire. Would you agree? Give reasons for your response.

Solution

It is not a wise idea to replace the fuse with a piece of wire, as it has a very low melting point. In the case of the metal piece, the melting point will be high, and the circuit will be intact in case there is overload or overheating.

Question 12

Zubeda made an electric circuit using a cell holder shown in Fig. 14.4, a switch and a bulb. When she put the switch in the 'ON' position, the bulb did not glow. Help Zubeda to identify the possible defects in the circuit.

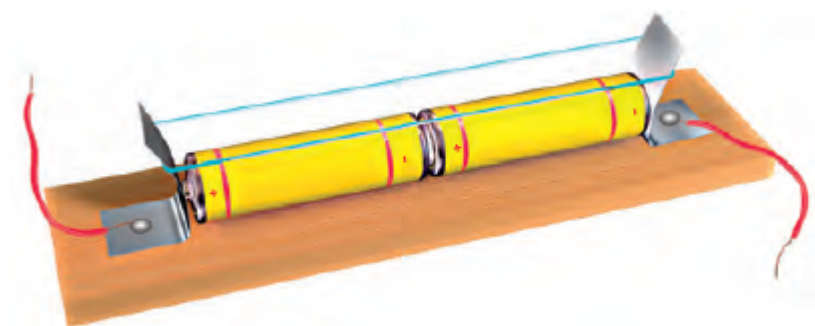


Fig. 14.4 A cell holder

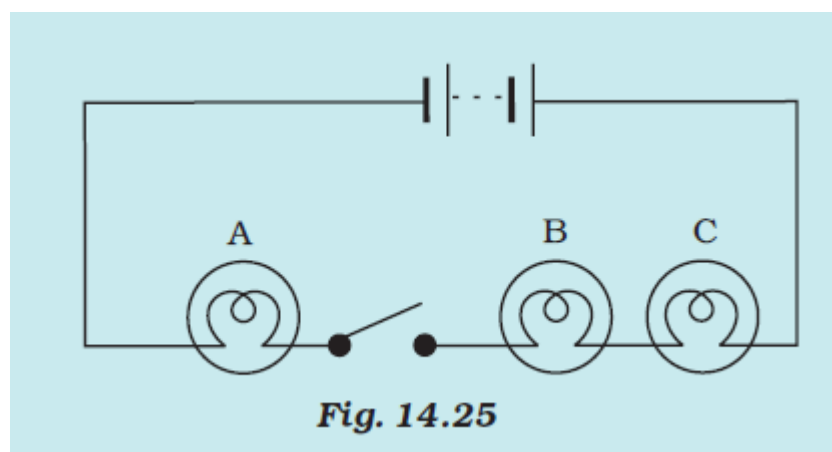
Solution

The reasons may be as follows:

- i) The connecting wire may be loose
- ii) The electric cell may be used up
- iii) Switch may not be functioning well
- iv) Cell power has been exhausted

Question 13

In the circuit shown in Fig. 14.25



(i) Would any of the bulb glow when the switch is in the 'OFF' position?

(ii) What will be the order in which the bulbs A, B and C will glow when the switch is moved to the 'ON' position?

Solution

i) No, the bulb will not glow as the circuit is not complete when the switch is off.

ii) If the switch is 'ON', all the bulbs glow simultaneously.

BYJU'S presents practice exercises, revision notes, and electric current questions and answers, which will help students understand the chapter and clarify their doubts, and thus prepare well for the annual exams.

Important Topics Covered in NCERT Solutions for Class 7 Science Chapter 14 Electric Current and Its Effects

- Symbols of Electric Components
- Heating Effect of Electric Current
- Magnetic Effect of Electric Current
- Electromagnet
- Electric Bell

Getting well-versed in Class 7 Electric Current concepts is very crucial for students. Current topics given in NCERT Class 7 textbooks play a pivotal role in examinations. It is very important to practise the symbols, circuit diagrams, formulae and problems to score good marks. At BYJU'S, downloadable files of e-books, notes, PDFs, and solved previous years' question papers are available for students to start their exam preparation without delay.

To know more about how to represent electric components by symbols, draw circuit diagrams, the heating effect of current and its applications, electric fuse, magnet-like behaviour of electric current while flowing through a wire, electromagnet, applications of electromagnets, etc., sign up with BYJU'S The Learning App. Once you have registered with BYJU'S, access to the online course is very simple.

Apart from NCERT Solutions for Class 7 Science Chapter 14, get NCERT Solutions for Class 7 Science other chapters here. Students can download worksheets, assignments, NCERT Class 7 Science Solutions and other study materials for exam preparation and score good marks.
