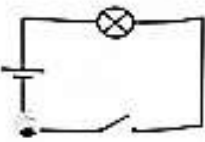

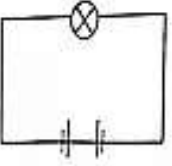
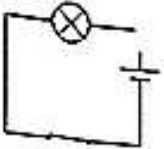
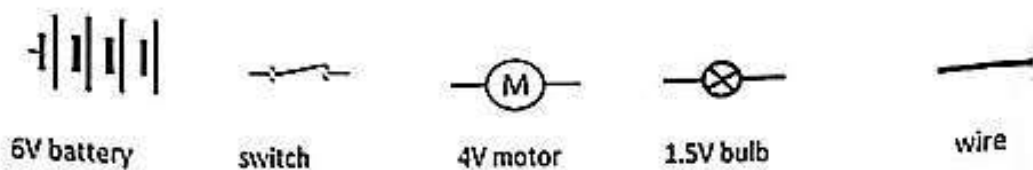


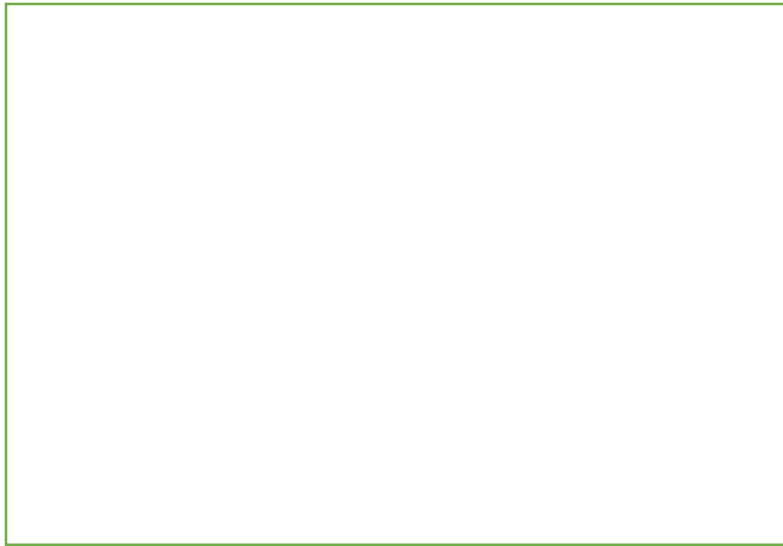
Q1. There are some circuits shown below, but they are not working.  
Give the reason in the given space.

	<hr/> <hr/>
	<hr/> <hr/>
	<hr/> <hr/>
	<hr/> <hr/>

Q2. Abdullah made a circuit in physics lab by using these components.



(a) Draw the circuit diagram.



(b) Will the bulb glow?

---

(c) Will the motor work?

---

Different components need different strength of electricity to work properly.  
Now he wants to replace the 4V motor to the 6V buzzer.

(d) Will the buzzer work?

---

(e) What change does he need to make the buzzer work?

---

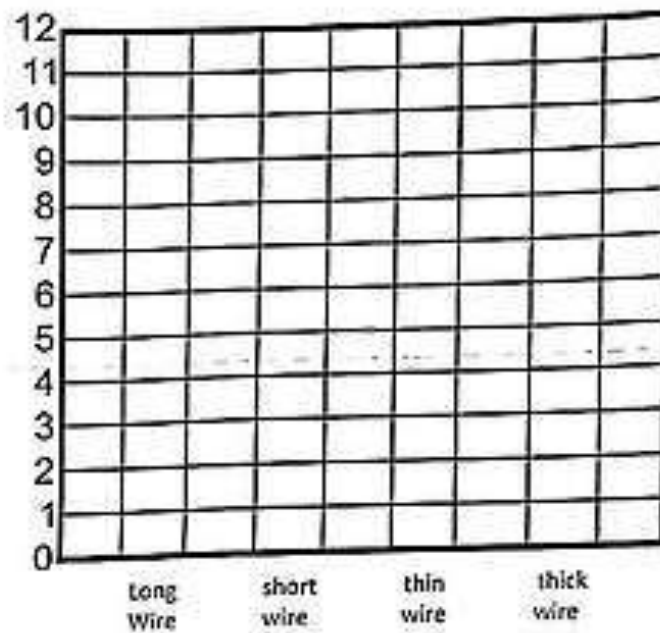
---

Q3. Hafsa and Iqra were investigating the current flows in a circuit by changing different lengths and thickness of wire.

Here are there results.

Different Wires	Current (amps)
Long wire	6
Short wire	15
Thin wire	5
	14

(a) Plot their results on a bar chart.



(b) Why short and thick wire are showing more current readings.

Give reasons?

---

---

Q4. Rayyan has made this circuit by using long and thin wires.

Now he wants to glow the bulb more brightly.

what changes he need to make?

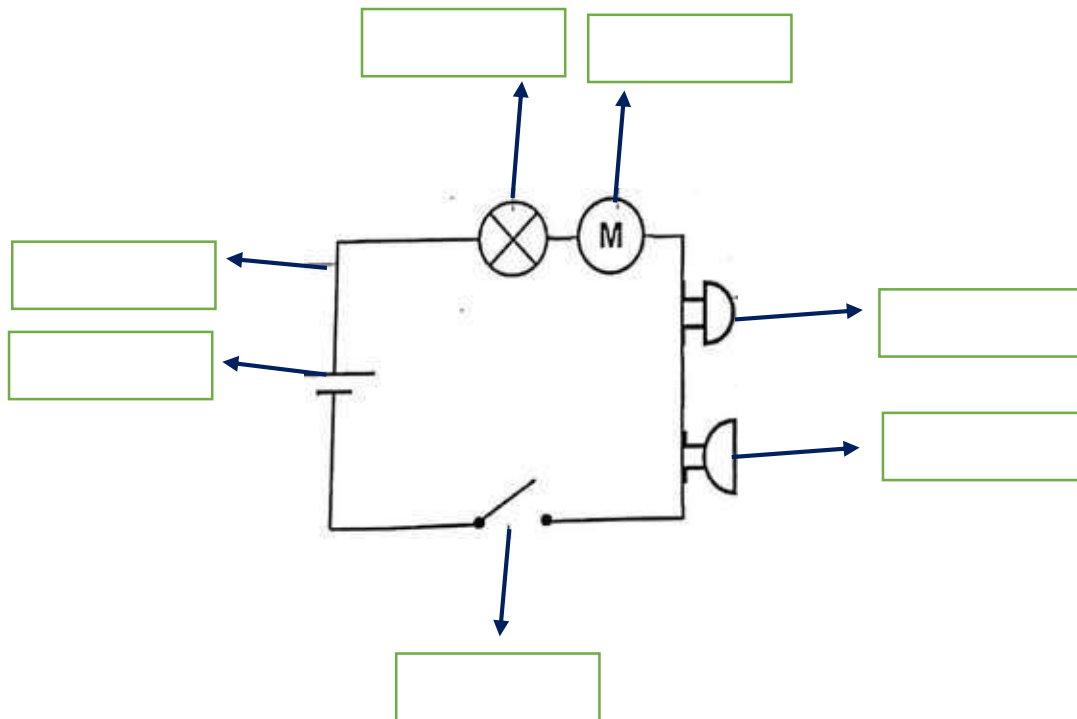
---

Q5. Use the words in the box to complete the sentences.

batteries	electricity	energy	metals	solution	twitches
-----------	-------------	--------	--------	----------	----------

1. Chemical reactions in \_\_\_\_\_ supply \_\_\_\_\_ to make electric circuit work.
2. Galvani observed \_\_\_\_\_ in frog's legs which made him think that they produced \_\_\_\_\_.
3. Volta's experiments showed that different \_\_\_\_\_ produce electricity which flows through conducting \_\_\_\_\_.

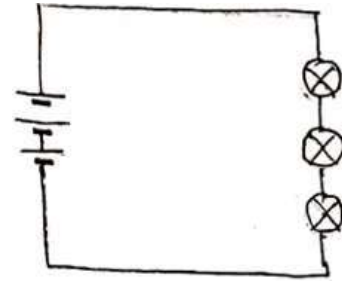
Q6. Label the components of given circuit.



Q7. Osama has made this circuit.

a) List the components in the circuit.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



b) Will the bulbs light up? Explain your answer.

---

---

c) If Osama removes a bulb from the circuit, will the remaining two bulbs glow more or less brightly?

---

d) If he adds two more bulbs to the circuit, will the bulbs glow more or less brightly?

---

e) If he removes cell from the circuit, will the bulbs glow more or less brightly?

---

f) If he adds a cell to the circuit, will the bulbs glow more or less brightly?

---

Q8. Why we don't use metal as a covering of electric plugs?

---

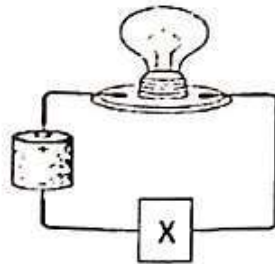
---

Q9. The parts inside the appliance are made from \_\_\_\_\_ material so that electricity can pass through.

Q10. Write the names of alloys and their combinations?

Alloys	Combinations

Q11. Zayan is checking different materials whether they are electrical conductor or insulators. For this he placed different material at place 'X' in the circuit.



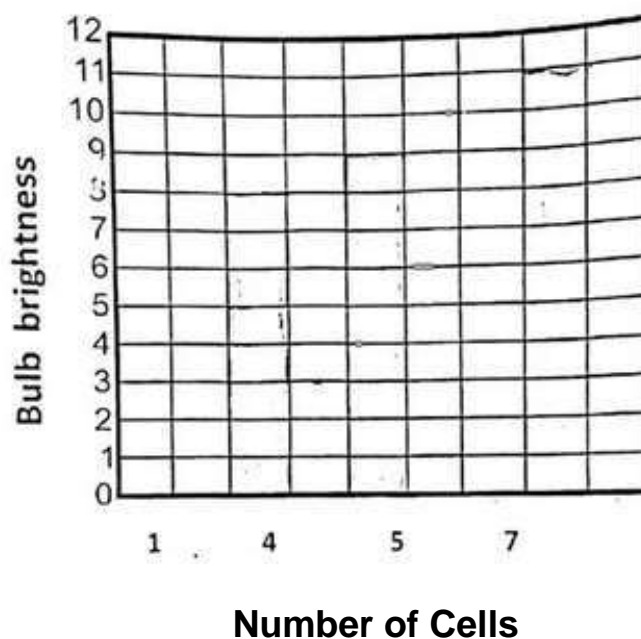
a) Record your answer by putting a tick in right columns.

Different materials	Electrical conductors	Electrical insulators
Aluminum		
Wooden cork		
Metal key		
Silver jewelry		
Plastic toy		
Gold bar		
T-shirt		

b) Zayan was investigating the brightness of different bulbs by using different strength of cells. Here are the results.

Number of cells	Bulb brightness
1	0
4	8
5	9
7	11

c) Draw a bar graph of his results.



Q12. Choose the correct words from the box to complete the sentences.

dissolved	steam	salts	distilled	pure	condensed
-----------	-------	-------	-----------	------	-----------

Water from a river or the tap is not \_\_\_\_\_. It has \_\_\_\_\_ dissolved in it.

Pure water is \_\_\_\_\_ water. This water has been boiled and the \_\_\_\_\_ has been \_\_\_\_\_. This condensed steam does not contain any \_\_\_\_\_ salts.

Q1. In a circuit diagram, what does a circle with a cross inside it represent?  
[12]

- a. A light bulb
- b. A motor
- c. A battery

Q2. What do the long straight lines represent in a circuit diagram?

- a. Motors
- b. Light bulbs
- c. Wires

Q3. How is a battery represented in a circuit diagram?

- a. A circle with a cross inside it
- b. A circle with an M inside it
- c. A long line and a short line

Q4. A material that lets electricity pass through it is called

- a. an electrical conductor
- b. an electrical insulator
- c. an electrical appliance

Q5. A material that does NOT let electricity pass through it is called

- a. an electrical conductor
- b. an electrical insulator
- c. an electrical appliance



Q6. Which of the following materials is an electrical conductor?

- a. Silver
- b. Silver-colored plastic
- c. Cork

Q7. Which of the following materials is an electrical insulator?

- a. Aluminum
- b. Gold
- c. Rubber

Q8. Why is a bulb brighter when it is powered by two batteries rather than one?

- a. Because the flow of electricity in the circuit is less
- b. Because the flow of electricity in the circuit is the same
- c. Because the flow of electricity in the circuit is greater

Q9. Ruby has connected two bulbs across two batteries in a simple circuit. How can she make the bulbs dimmer?

- a. Replace one of the batteries with a section of wire
- b. Replace one of the batteries with a cork
- c. Replace one of the bulbs with a section of wire

Q10. Ruby makes a complete simple circuit with one bulb and three batteries. The bulb lights for an instant and then goes out. Why?

- a. Not enough electricity flows around the circuit
- b. Too much electricity flows through the bulb's filament
- c. The batteries are flat

Q11. Why is electrical wiring usually made from copper?

a. Because copper is shiny

b. Because copper conducts electricity

c. Because copper is not magnetic

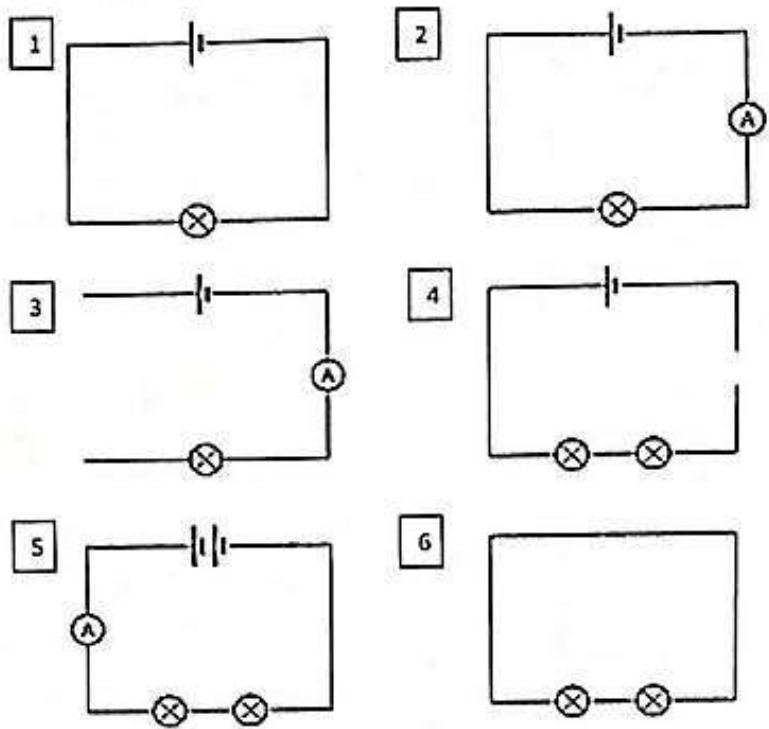
Q12. Why is electrical wiring usually covered with a layer of plastic?

a. To make it look pretty

b. To help electricity flow along the wire

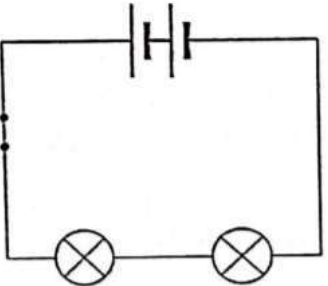
c. To make it safe

Q13. List the numbers of the circuit diagrams you think will work in the given column. [1]



Circuits that will work	Circuits that will NOT work

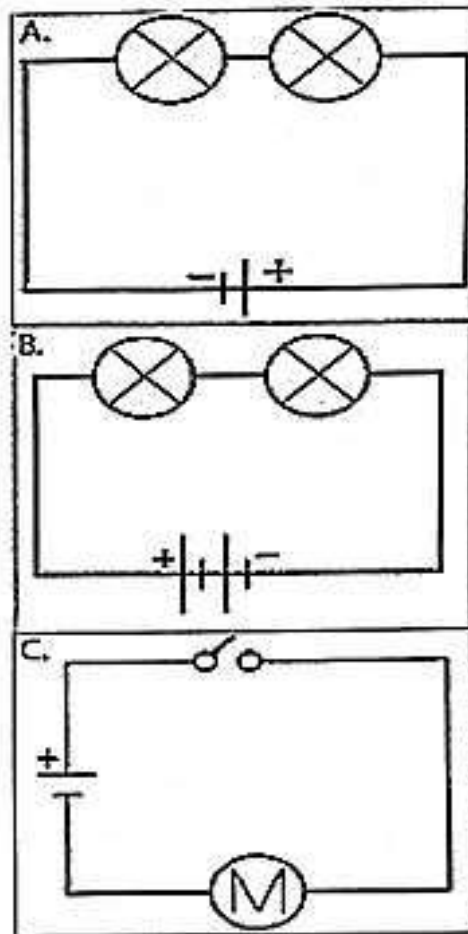
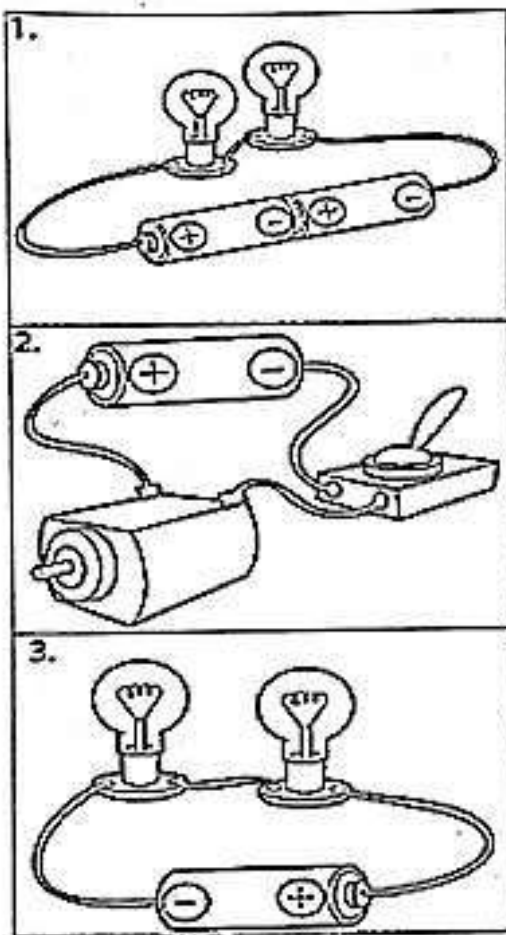
Q14. List the names of the components for circuit diagram and draw circuit diagram in front of the components mentioned. [10]

Circuit Diagram	List of Components
	<ul style="list-style-type: none"> <li>▪ Two bulbs</li> <li>▪ Cell</li> <li>▪ Wires</li> </ul>
	
	<ul style="list-style-type: none"> <li>▪ 2 Cells</li> <li>▪ Bulb</li> <li>▪ Wires</li> </ul>

Q15. This instrument can be used to see if materials conduct electricity. Which of these groups contains items that could all conduct electricity to complete the circuit? [1]

- i. Rubber ball, plastic comb, nail
- ii. metal Paperclip, penny, screw
- iii. Cork, dollar bill, tweezers
- iv. Pencil, eraser, spoon

Q16. Study the circuits below and match them to the appropriate circuit diagram. [3]



- 1 matches \_\_\_\_\_.
- 2 matches \_\_\_\_\_.
- 3 matches \_\_\_\_\_.