



PHYSICS

BOOKS - MTG IIT JEE FOUNDATION

ELECTRICITY AND CIRCUITS

Solved Examples

1. Why should we not connect the terminals of cell directly without an electric device in between?



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2. When electric cell is said to be dead?



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3. Ansh made an electric circuit by using a dry cell , two electric wires and one electric bulb . First , he connected one end of wire to the positive terminal and another end of wire to the negative terminal of the cell .Now , he

connect the bulb to the wire which is connected with the negative terminal of the cell .Does bulb glow ?



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4. Complete the following sentence .

Current is considered to flow from _____ terminal of the cell towards the _____ terminal of the cell . An electric current possesses _____.



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5. Arrange them in the increasing order of power use : mobile phones . Man -made satellites car battery .



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6. What is conventional flow of current ?



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7. How does an electric bulb get fused ?





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8. Why earthing is necessary ?



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9. Why is a switch important in an electric circuit ?



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10. Rahul made an electric circuit using copper wire to connect different components of electric circuit ,Now , he has replaced the copper wire with a thick thread .In which case , does the bulb glow ?



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11. Identify the materials which are used in making plugs , sockets etc : copper rubber ,plastic bakelite , aluminium.





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12. Silver is one of the best conductors of electricity even then , copper wires are used in electric circuit Why ?



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13. Why does current not pass through distilled water but normal tap water conducts electricity ?



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14. Why do the electrical gadgets stop working when switch is turned OFF ?



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15. What may happen if we handle electricity carelessly ?



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1. Fill in the blanks .

A device that is used to break an electric circuit is called _____ .



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2. An electric cell has _____ terminals.



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3. Answer 'True or False' for the following statements.

Electric current can flow through metals



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4. Mark 'True' or 'False' for following statements:

Instead of metal wires, a jute string can be used to make a circuit.



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5. Answer 'True or False' for the following statements.

Electric current can pass, through a sheet of thermocol



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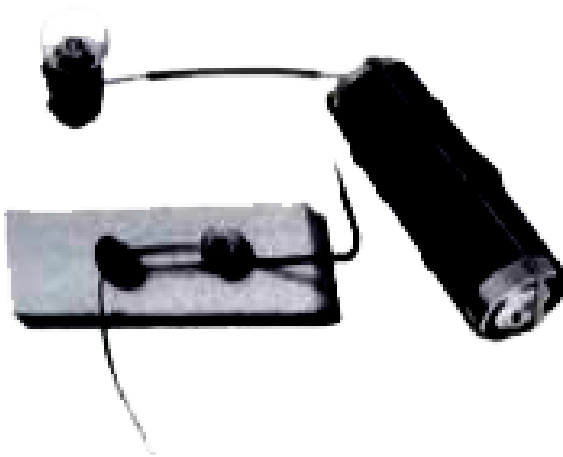
6. Explain why the bulb would not glow in the arrangement shown in figure .



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7. Complete the drawing shown in Fig 12.14 to indicate where the free ends of the two wires

should be joined to make the bulb glow.



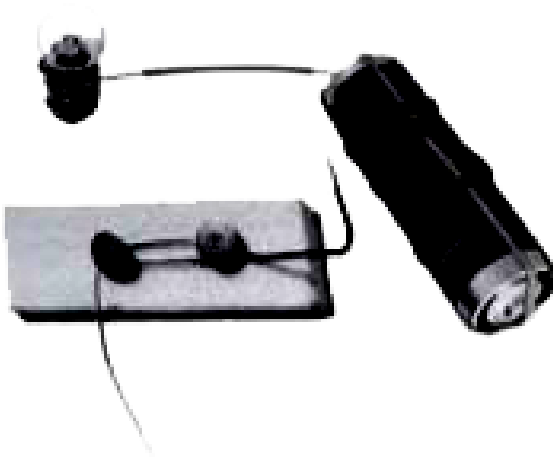
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8. What is the purpose of using an electric switch? Name some electrical gadgets that have switches built into them.



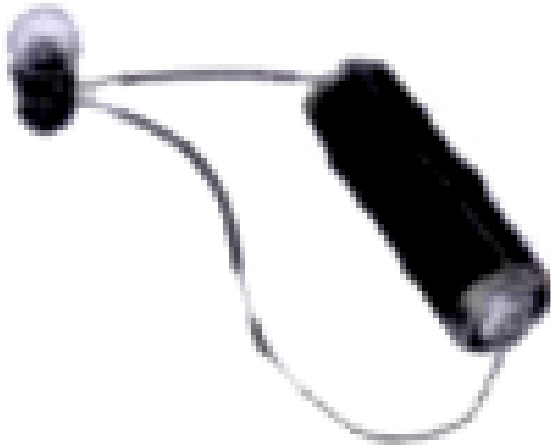
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9. Would the bulb glow after completing the circuit shown in Fig. 12.14 if instead of safety pin we use an eraser?



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10. Would the bulb glow in the circuit shown in figure ?



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11. Using the 'conduction tester on an object it was found that the bulb begins to glow. Is that

object a conductor or an insulator? Explain.



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12. Why should an electrician use rubber gloves while repairing an electric switch at your home? Explain.



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13. The handles of the tools like screwdrivers and pliers used by electricians for repair work

usually have plastic or rubber covers on them.

Can you explain why?



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Exercise Multiple Choice Questions Level 1

1. Which one of the following is the best conductor of electricity ?

A. Aluminium

B. Silver

C. Plastic

D. Paper

Answer: B



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2. In an electric wire , the outer plastic case provides

A. reflection

B. transparency

C. conduction

D. insulation

Answer: D



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3. A cell converts ____ energy into ____ energy .

A. heat , electrical

B. electrical , heat

C. chemical , electrical

D. electrical , chemical

Answer: C



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4. A _____ controls the flow of electricity in circuit .

A. switch

B. wire

C. cell

D. bulb

Answer: A



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5. In an electric cell , a metal cap on the top of the carbon rod acts as

A. the insulated material

B. the positive terminal of the cell

C. the negative terminal of the cell

D. a switch of the cell .

Answer: B



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6. Filament of the bulb is made of

A. zinc

B. copper

C. tungsten

D. electrolyte

Answer: C



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7. Which of these will generate electric current when kept in sunlight but will not generate when kept in the dark ?

A. Car battery

B. Button cell

C. Solar cell

D. Dry cell

Answer: C



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8. Which of the following does not conduct electricity ?

A. Lime juice

B. Salt solution

C. Pure water

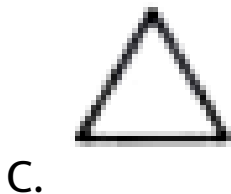
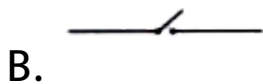
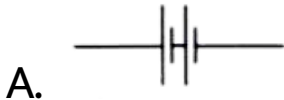
D. Metal

Answer: C



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9. Which of the following is not a symbol of a circuit element ?





D.

Answer: C



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10. Transmission wires are made by

A. plastic

B. rubber

C. jute

D. aluminium

Answer: D



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11. Electric current can flow through

A. air

B. human body

C. both (a) and (b)

D. neither (a) nor (b)

Answer: B



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12. Electric switch is a device which is used in

- A. making of electric circuit
- B. breaking of electric circuit
- C. both (a) and (b)
- D. neither (a) nor (b)

Answer: C



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13. If electricity is passing through an electric circuit , then circuit is called

- A. an open circuit
- B. a closed circuit
- C. a complete circuit
- D. both (b) and (c)

Answer: D



14. The direction of flow of electric current in an electric circuit is

- A. positive to negative
- B. negative to positive
- C. positive to positive
- D. negative to positive

Answer: A



15. The complete pathway for the flow of current is called

- A. electric wire
- B. electric switch
- C. electric current
- D. electric circuit

Answer: D



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16. Which of the following is not a component of an electric circuit ?

A. Electric cell

B. Electric wire

C. Electrolyte

D. Switch

Answer: C



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17. The cells that can be recharged on being drained completely and so they can be reused are known as

- A. secondary cells
- B. storage cells
- C. primary cells
- D. both (a) and (b)

Answer: D



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18. The storage battery generally used in electric power station is

A. nickel -cadmium battery

B. zinc -carbon battery

C. lead -acid battery

D. none of these.

Answer: C



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19. Kerosene oil is an example of

A. conductor

B. insulator

C. Electrolyte

D. none of these.

Answer: B



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20. Who invented electric bulb ?

A. Einstein

B. Thomas Alva Edison

C. Charles Babbage

D. none of these.

Answer: B



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21. In electric bulb , on passing electricity , which of the following heats up and glows to give light ?

A. Supporting wire

B. Glass

C. Inert gas

D. Filament

Answer: D



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22. Why is the metal spring used in electric torch ?

A. To attach the positive terminal of the lower cell to switch .

B. To make contact with the switch .

C. To connect the bulb with the cell .

D. none of these.

Answer: B



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23. Materials which allow electric current to pass through them are called

A. conductors

B. insulators

C. reflectors

D. electric switches

Answer: A



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24. Materials which do not allow electric current to pass through them are known as

- A. reflectors
- B. metals
- C. conductors
- D. insulators

Answer: D



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25. Tungsten in a bulb is a / an

A. conductor

B. insulator

C. reflector

D. regulator

Answer: A



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26. A slider in a torch used to

- A. switch the torch ON only
- B. switch the torch OFF only
- C. switch the torch ON or OFF
- D. none of these.

Answer: C



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27. The two ends of a device or an electric cell at which connections can be made in an electric circuit are known as

A. electric switches

B. electric wires

C. terminals

D. none of these.

Answer: C



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28. A safety device that is used to protect an electric circuit from overloading is called

A. switch

B. insulator

C. fuse

D. conductor .

Answer: C



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29. Solar cell is a

A. primary cell

B. secondary cell

C. natural cell

D. none of these.

Answer: B



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30. Electricity can be generated on a large scale from

A. coal

B. ice

C. cables

D. all (a) , (b) , and (c) .

Answer: A



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Exercise Multiple Choice Questions Level 2

1. Choose the correct order with respect to conductivity .

A. Gold > Silver > Aluminium

B. Silver > Gold > Aluminium

C. Aluminium > Silver > Gold

D. Gold > Aluminium > Silver

Answer: B



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2. Which one is incorrect among the following statements ?

A. Cells used in wrist watches are button cells .

B. Secondary cells are rechargeable cells .

C. When current is passed through the filament bulb glows .

D. none of these.

Answer: D



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3. Sometimes electric bulb does not glow even when electric switch is ON , then we say that

A. electric circuit is closed circuit

B. electric current is low

C. electric bulb is fused

D. electric switch is working properly .

Answer: C



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4. Why are rubber and plastic used for covering the electrical switches or wires ?

A. Rubber and plastic are good conductors

.

B. Rubber and plastic are insulators .

C. Rubber is a good conductor and plastic is a bad conductor .

D. Plastic is a good conductor and rubber is a bad conductor

Answer: B



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5. A battery is made by using

- A. two or more dry cells
- B. one dry cell and one button cell
- C. two or more button cells
- D. none of these.

Answer: A



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6. Which of the following are insulators ?

A. Brass , gold , steel

B. Tap water , human body , silver

C. Moist air , human body

D. Pure water , air mica

Answer: D



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7. Which of these conducts electricity ?

A. plastic

B. Wood

C. Rubber

D. Safety pin

Answer: D



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8. Which of the following devices does not convert electrical energy into mechanical energy ?

- A. Vacuum cleaner
- B. Washing machine
- C. Mixer
- D. Speaker

Answer: D



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9. Devices that are used to convert electrical energy into heat energy are

- A. toaster and mixer
- B. geyser and heater
- C. electric iron and speaker
- D. TV and radio

Answer: B



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10. A solar cell converts

- A. electrical energy into mechanical energy
- B. solar energy into electrical energy
- C. mechanical energy in to solar energy
- D. solar energy into mechanical energy

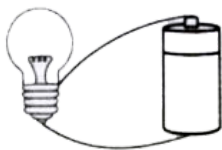
Answer: B



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11. In which case does the bulb glow ?

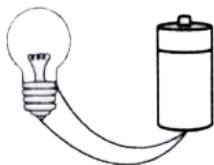
A.



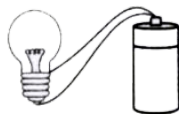
B.



C.



D.



Answer: A



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12. Which of the following bulbs is /are fused bulb (s) ?



(A)



(B)

A. Only (A)

B. Only (B)

C. both (a) and (b)

D. neither (a) nor (b)

Answer: B



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13. When more than one electric cell have to be used , they are joined to the electric circuit in such a way that

A. the positive terminal of one electric cell is connected to the positive terminal of

the another electric cell

B. the negative terminal of one electric cell

is connected to the negative terminal of

the another electric cell

C. the positive terminal of one electric cell

is connected to the negative terminal of

the another electric cell

D. both the cells are parallel to each other

with similar terminals in same side .

Answer: C



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14. Which of the following prevents a short circuit ?

A. Switch

B. Conductor

C. Insulator

D. Wire

Answer: C



15. Suppose you are a scientist and you have to make a satellite to send it into orbit in outer space .Which of these will you use as a source of power in the satellite ?

- A. Dry cell
- B. Car battery
- C. Solar cell
- D. Button cell

Answer: C



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16. A student , while making a circuit to make a bulb glow using a dry cell , connected the plastic covering of the wire to the cell , instead of the metal wire inside it .Then ,

A. current will not flow in the circuit

B. bulb will be fused

C. bulb will start glowing but with
diminished light

D. electric circuit will be short circuited .

Answer: A



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17. Which of the following pairs does not show
same electrical property ?

A. Copper and Aluminium

B. Air and human body

C. Silver and steel

D. Distilled water and mica

Answer: B



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18. The coloured plastic covering on an electric wire makes the wire

A. Safe to touch

B. Long lasting

C. More attractive

D. Resistant to corrosion

Answer: A



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19. Electric current is carried from a powerhouse by

A. fuse

B. live wire

C. earth wire

D. neutral wire

Answer: B



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20. When will we get electric shock from the electric circuit ?

A. When electric bulb will be fused due to break in filament .

B. When terminals will be connected with each other not properly.

C. When battery or cell used will be completely drained .

D. When we will touch bare wires with bare hands used in the circuit .

Answer: D



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Exercise Fill In The Blanks

1. _____ is the flow of electric charges .



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2. A complete and closed pathway for the electric current to flow constitutes the _____.



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3. _____ contains a chemical paste called electrolyte in a cylindrical container made of zinc .



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4. _____ flowing in the filament of an electric bulb makes it glow .



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5. The two cells inside the torch convert their energy into _____ energy to make the light bulb glow .



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6. A torch is a/an _____ source of light .



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7. In an electrical circuit ,source of current is _____ .



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8. Metals are ____ of electricity .



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9. In switches _____ separates the metal terminals from each other .



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Exercise True Or False

1. Handle of screw dirver is made of insulator .



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2. Both conductors and insulators are important in an electric connection .



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3. In an open circuit , current passes through the cell .



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4. Electrical energy is used to produce heat only , not light .



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5. A cell used electricity to produce chemical energy .



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6. Human body conducts electricity.



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7. Button cells are used in wall clock .



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8. Fuse melts and breaks the circuit when a large amount of electric current is flowing through it .



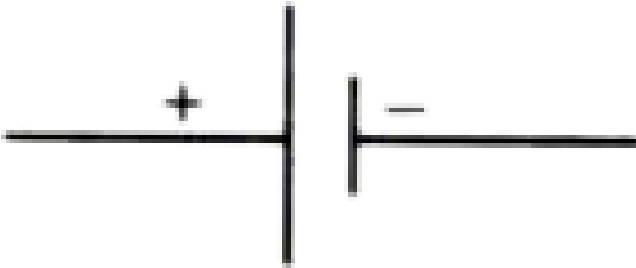
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9. Primary cell is a rechargeable cell .



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10. Symbol



is a

symbol for electric battery .



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Exercise Match The Following

1. List -I and List -II are given as options (a) ,(b) , (c) and (d) out of which one is correct .

List-I

(P) Fuse

(Q) Terminal

(R) Filament

(S) Electric cell

List-II

1. A conducting wire in an electric bulb that glows when electricity is passed through it.
2. A small wire or a device that can break an electric circuit.
3. Two ends of a device or an electric cell at which connection can be made.
4. Device that generates electricity from chemical reactions.

A. P-4 , Q-3 , R-2 , S-1

B. P-3 , Q-2 , R-1 , S-4

C. P-2 , Q-3 , R-1 , S-4

D. P-1 , Q-2 , R-4 , S-3

Answer: C



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2. List -I and List -II are given as options (a) ,(b) , (c) and (d) out of which one is correct .

List-I	List-II
(P) Electric source	1. Nickel-cadmium
(Q) Conductor	2. Pure water
(R) Insulator	3. Tap water
(S) Rechargeable cell	4. Dry cell

A. P-1 , Q-3 , R-2 , S-4

B. P-4 , Q-3 , R-2 , S-1

C. P-3 , Q-2 , R-1 , S-4

D. P-2 , Q-4 , R-3 , S-1

Answer: B



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3. List -I and List -II are given as options (a) ,(b) ,(c) and (d) out of which one is correct .

List-I	List-II
(P) The material of the filament of a bulb	1. Argon
(Q) An inert gas	2. Insulator
(R) The closed path that allows the flow of current	3. Tungsten
(S) Materials that do not conduct electricity	4. Circuit

A. P-1 , Q-3 , R-2 , S-4

B. P-3 , Q-1 , R-4 , S-2

C. P-4 , Q-2 , R-3 , S-1

D. P-2 , Q-4 , R-1 ,S-3

Answer: B



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Exercise Assertion Reason Type

1. Assertion : Electricity provides both heat and light .

Reason : Electricity is easily convertible to other forms of energy .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: A



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2. Assertion : Dry cell is used to convert chemical energy into electrical energy .

Reason : Chemical reactions occur in the electrolyte of the dry cell that generate electricity .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: A



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3. Assertion : With the broken filament , the bulb will never glow .

Reason : Current flows in a complete path .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: A



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4. Assertion : The stopping and starting of flow of electric current in an electric circuit is controlled by an electric switch .

Reason : The electrical switches close the circuit when it is ON and open the circuit when it is in OFF condition .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: B



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5. Assertion : We cannot use cotton thread while connecting electric equipments in an electric circuit .

Reason : Cotton thread in an electric circuit can be used as an electrical fuse .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: C



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6. Assertion : In simple battery circuit , the point at the lowest potential is negative terminal of the battery .

Reason : The current flows towards the point of the highest potential , as it does in a circuit from negative to the positive terminal .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: C



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7. Assertion : The electrical wires are covered with plastic and rubber like materials .

Reason : Insulators do not allow the flow of current through them .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: A



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8. Assertion : Primary cells can be recharged but secondary cells cannot be recharged .

Reason : Chemical reactions involve in primary cells are irreversible and in secondary cells are reversible .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: D



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9. Assertion : Fuse wire must have low melting point .

Reason : Fuse is used for small current flow only .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of

assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: C



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10. Assertion : One should not touch the water heater with wet hands .

Reason : Tap water is good conductor of electricity .

A. If both assertion and reason are true and reason is the correct explanation of assertion .

B. If both assertion and reason are true but reason is not the correct explanation of assertion .

C. If assertion is true reason is false .

D. If assertion is false but reason is true .

Answer: B



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Exercise Comprehension Type

1. There is a variety of materials that are used to make components of electrical circuits . These materials have good electrical conductivity . In spite of having the largest conductivity among metals , silver is not used to make electric wires . Aluminium copper and are generally used to make electric wires . Not only conductors , insulators are also important . The electrical wires are covered

with plastic and rubber like materials . This is used to prevent short circuit and also to protect the user .

What kind of materials are used to make electrical wires in an electric circuit ?

A. Insulators

B. Conductors

C. Electrolytes

D. All of these

Answer: B



2. There is a variety of materials that are used to make components of electrical circuits . These materials have good electrical conductivity . In spite of having the largest conductivity among metals , silver is not used to make electric wires . Aluminium copper and are generally used to make electric wires . Not only conductors , insulators are also important . The electrical wires are covered with plastic and rubber like materials . This is

used to prevent short circuit and also to protect the user .

Insulation is used in electric wire to prevent from

- A. a short circuit
- B. electric shock
- C. fuse
- D. both (a) and (b)

Answer: D



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3. Fuse is a simple device for protecting electric circuits from overloads and short - circuits . A Fuse consists of one or several fuse links , an insulating body and terminals for connecting the fuse to an electric circuit . Fuses are connected in an electric circuit and break the circuit when the fuse links melt. Among these the main characteristics of fuse link is /are

A. low melting point

B. high conductivity

C. both (a) and (b)

D. none of these.

Answer: C



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4. Fuse is a simple device for protecting electric circuits from overloads and short-circuits. A Fuse consists of one or several fuse links, an insulating body and terminals for

connecting the fuse to an electric circuit .

Fuses are connected in an electric circuit and break the circuit when the fuse links melt.

A material best suited for the manufacturing of the fuse is

A. brass

B. copper

C. aluminium

D. gold

Answer: B



5. Fuse is a simple device for protecting electric circuits from overloads and short-circuits. A Fuse consists of one or several fuse links, an insulating body and terminals for connecting the fuse to an electric circuit. Fuses are connected in an electric circuit and break the circuit when the fuse links melt.

Fuses work only

A. when excess current flowing in the circuit

B. low current flowing in the circuit

C. both (a) and (b)

D. none of these.

Answer: A



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6. There are electrical appliances like heaters , fans refrigerators and coolers .These run on electricity supplied to our homes from the power station through the mains .There is another set appliances that runs on cells , like torches , toys , alarm clocks and mobile phones . You can easily handle appliances that run on cells .However , you may get bad shock if you touch an electrical socket or a live wire attached to the mains . _____ supply a very small amount of electrical energy .

A. Battery

B. Main supply

C. Dry cell

D. none of these.

Answer: C



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7. There are electrical appliances like heaters , fans refrigerators and coolers .These run on electricity supplied to our homes from the

power station through the mains .There is another set appliances that runs on cells , like torches , toys , alarm clocks and mobile phones . You can easily handle appliances that run on cells .However , you may get bad shock if you touch an electrical socket or a live wire attached to the mains . Safety measure to avoid shock from an electric circuit is

A. plastic insulation over live wire

B. earthing of the heavy load instruments

C. using rubber gloves and shoes while
working

D. All of these

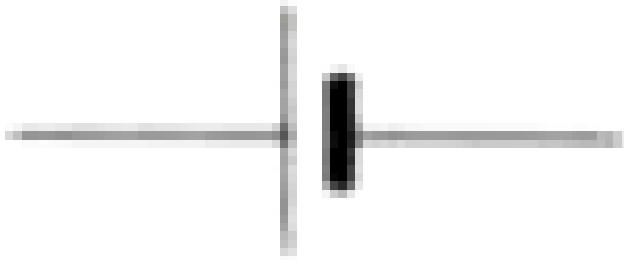
Answer: D



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**Exercise Subjective Problems Very Short Answer
Type**

1. The given figure is made up of two parallel lines . One is thin and long other is short and thick .What does this mean ?



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2. Name any four appliance which convert electrical energy into heat .

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3. Rita wanted to glow a bulb of the torch using a cell .She could not get connecting wires , instead, she got two strips of aluminium foil .will she succeed ? Explain how ?



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4. In electric cell , which parts are the positive and negative terminals ?



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5. Why does an electric bulb does not glow even it is connected to the cell ?



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6. What is the full form of LED ?



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7. What is the difference between a conductor and an insulator?



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8. Is it possible for electric current to flow in a bulb with a broken filament ?



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9. What are the essential parts of an electric bulb?



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10. A dry cell when drained completely cannot be used again, however , some other cells can be used again by charging them .Name two such cells .



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Exercise Subjective Problems Short Answer Type

1. Why are metals used to make electrical wires ?



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2. What would happen if we will replace metal wire by rubber band in an electrical circuit ?



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3. Why should we wear rubber slippers or shoes while handling electrical appliances ?



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4. Why does a naked live wire give us a jolt ?



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5. What would happen if CAUTION mark is not displayed at outside the electric sub -stations and on high powered electrical devices ?



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6. Why are electric cells not enough to use in electricity requirements at home ?



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7. What is the working of an electric cell ?



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8. Differentiate between a button cell and a solar cell ?



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9. What is the role of a slider in a torch ?



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10. What is the function of a filament in an electric bulb ?



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11. Unscramble each of the following to form a word or term : (a) ICTCUIR

(b) HOTCR

(c) DOCTORNUC

(d) TSWCHI



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12. What is the advantage of using an electric switch in an electric circuit ?



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13. In which manner , more than one electric cell is joined in an electric circuit ?



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14. Why are electric wires covered with plastics ?



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15. Can the electric wires at home be covered with aluminium foil instead of plastic ?



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Exercise Subjective Problems Long Answer Type

1. What are the different components that make an electric circuit ? Explain with diagram

.



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2. State the reasons due to which a bulb may get fused .



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3. What is the importance of an electric switch in an electric circuit ?



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4. Explain the conditions under which a bulb glows when it is connected by wires to a cell .



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5. How will you show that an object is an electric conductor or an insulator ?



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Exercise Integer Numerical Value Type

1. There are seven materials : Pure water , air , copper , aluminium , plastic , steel and glass .Out of these , how many materials are insulators ?



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2. How many statement (s) is /are correct ?

(a) Human body conducts electricity .

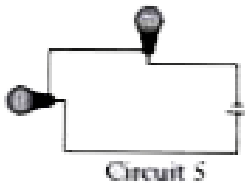
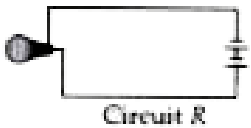
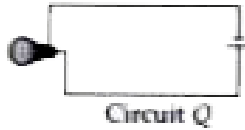
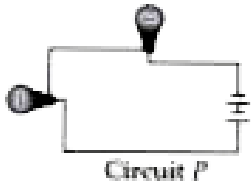
(b) Cork , safety pin and mica are examples of insulators .

(c) If both the terminals of the battery are connected to the bulb , bulb glows .



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1. There are four different circuits with bulbs (identical) and batteries as shown here .



In which circuit will the bulb (s) be the brightest ?

A. Circuit P

B. Circuit Q

C. Circuit R

D. Circuit S

Answer: C



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2. Nidhi has two bulbs connected across two cells in a simple circuit as shown .How can she

make the bulbs glow dimmer ?



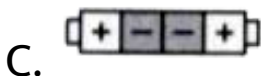
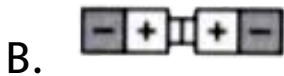
- A. Replace one cell with a piece of chalk .
- B. Replace one cell with a piece of wire .
- C. Replace one bulb with a piece of wire .
- D. Replace one bulb with another cell .

Answer: B



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3. Ankita has to put two cells in a torch .Which of the following arrangements should she choose ?



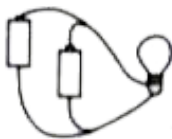
D. Any of the arrangements

Answer: A



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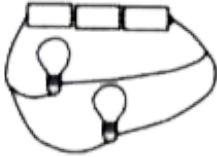
4. In which of the following arrangements of electrical circuits will the bulb (s) not light up , assuming that all the bulbs and dry cells are identical ?



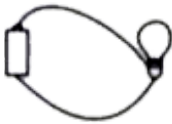
A.



B.



C.



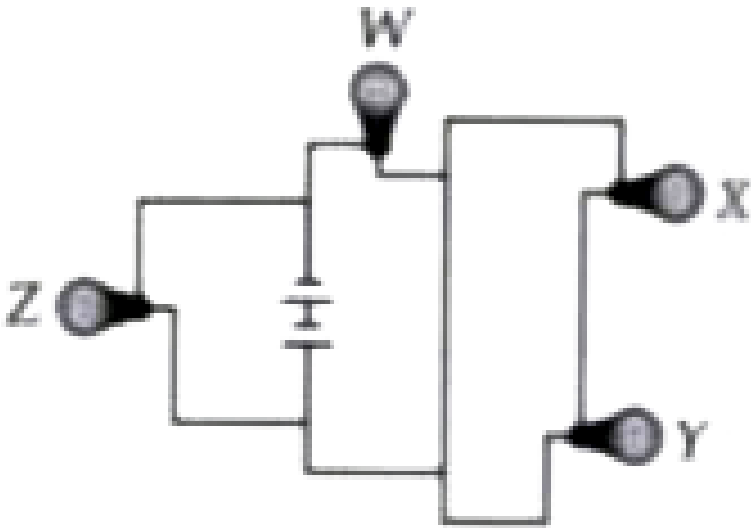
D.

Answer: B



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5. There is a fused bulb in the given circuit .
This causes only one bulb to remain lit . Which
is the fused bulb in the circuit ?



A. W

B. X

C. Y

D. Z

Answer: A



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6. In which of the following circuits will the bulb or bulbs glow least bright ?

A. A simple circuit with one bulb and one cell .

B. A simple circuit with one bulb and two cells .

C. A simple circuit with two bulbs and one cell .

D. A simple circuit with bulbs and two cells .

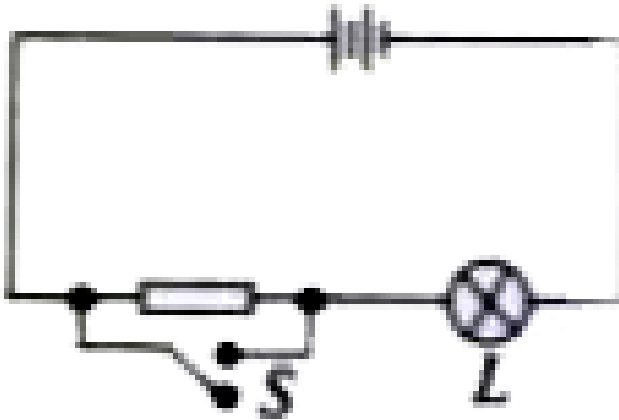
Answer: C



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7. The given figure shows an electric circuit in which a lamp L is connected .What happens to the brightness of the lamp L when the switch S is closed ?

(Box represents extra resistance in the circuit.)



A. It becomes dimmer

B. It becomes brighter .

C. It goes off .

D. It remains the same .

Answer: B



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8. Which of the following statements are correct ?

(i) An electric circuit must be opened for current to flow through it .

(ii) A dry cell converts electrical energy into chemical energy .

(iii) Electric current always flows from positive to the negative terminal of the cell through the circuit .

(iv) Pure water does not conduct electricity .

A. (i) and (ii) only

B. (iii) and (iv) only

C. (i) , (ii) and (iii) only

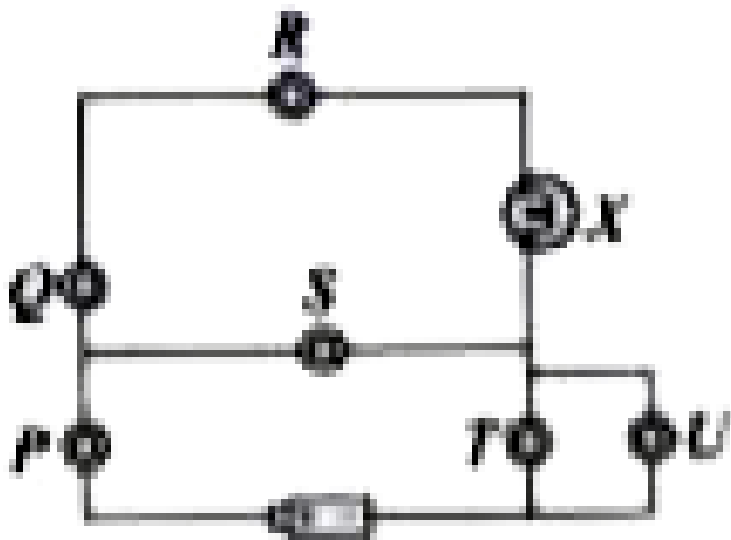
D. (ii) , (iii) and (iv) only

Answer: B



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9. The given figure shows six bells P , Q , R , S ,T, U and a bulb X connected in a circuit .Which of the given bells will continue to ring even if bulb X fuses ?



A. Q , R and S only

B. Q and U only

C. P , S , T and U only

D. P , Q , R , S and T

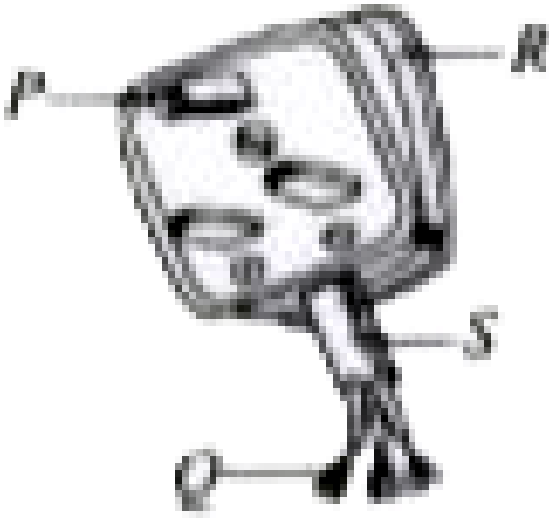
Answer: C



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10. To protect the user , part (s) _____ of the plug as shown in the figure must be made of

electrical insulators .



A. P only

B. R only

C. R and S

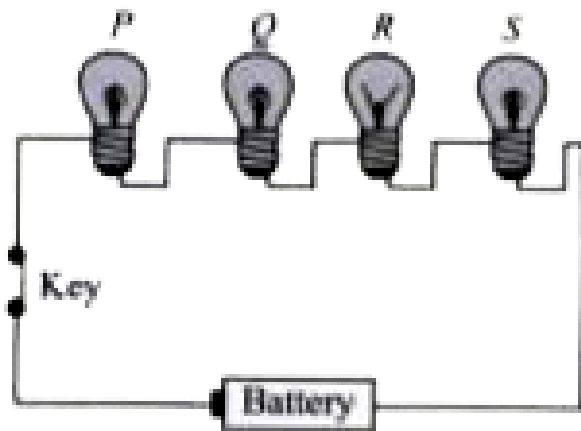
D. Q and S

Answer: C



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11. One of the four identical light bulbs in a series circuit has blown off as shown in the figure .



Which

of the following statements is correct about the bulbs ?

A. R will not glow while glow as before .

B. R will not glow while P , Q and S will glow brighter than before .

C. R will glow brighter than before while P , Q and S will glow as before .

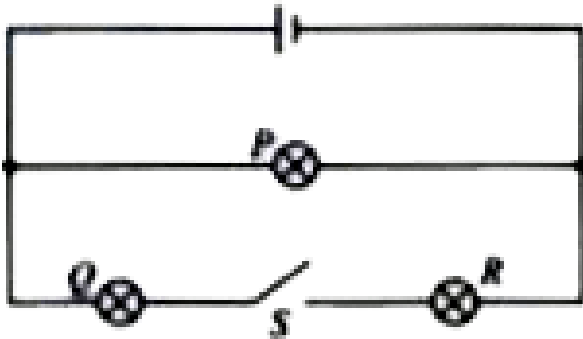
D. All the bulbs P , Q , R and S will not glow .

Answer: D



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12. In the given circuit , the three lamps are identical When switch S is closed then



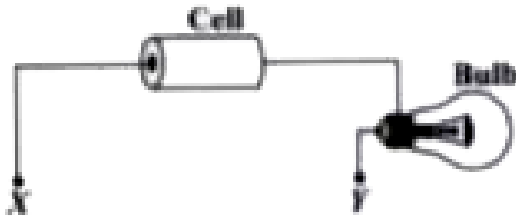
- A. Lamp P becomes dimmer
- B. Lamp P is as bright as lamp Q
- C. Lamp Q is not as bright as lamp R
- D. Lamp P remains as bright as before .

Answer: D



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13. The bulb will light up if the points X and Y are connected through ____ .



A. An iron wire

B. A glass rod

C. Plastic rod

D. A wooden stick

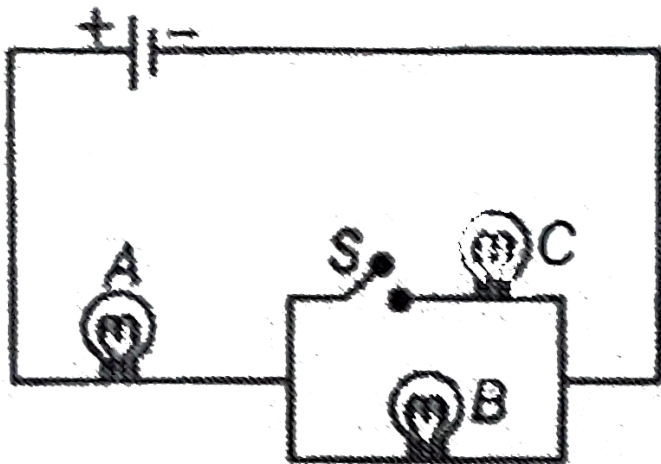
Answer: A



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14. A, B, C are identical bulbs. How does the brightness of A and B change when the switch

S is closed ?



A. Brightness of A increases but that of B decreases .

B. Brightness of A remains the same but that of B decreases.

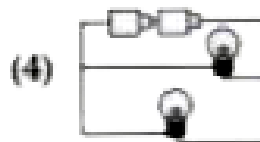
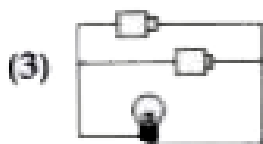
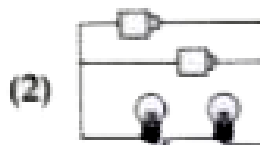
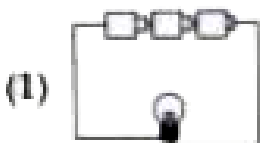
C. Brightness of both A and B decreases .

D. Brightness of both A and B increases .

Answer: A

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15. Consider the following circuits .



The correct option for the brightness of bulbs
in decreasing order is

A. 1,2,3,4

B. 2,3,4,1

C. 1,4,2,3

D. 1,4,3,2

Answer: D



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