



PHYSICS

BOOKS - PEARSON IIT JEE FOUNDATION

Electricity

Example

1. Four cells, each of e.m.f 1.5 V, are connected in series to form a battery.

Find the e.m.f of the battery.



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2. For how many hours can a 100 W bulb be used to have one unit of electrical energy consumption ?

A. 10 hours

B. 1 hours

C. 5 hours

D. 8 hours

Answer: A



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3. Four cells, each of e.m.f 1.5 V, are connected in series to form a battery.

Find the e.m.f of the battery.



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4. For how many hours can a 100 W bulb be used to have one unit of electrical energy consumption ?



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5. Four cells, each of e.m.f 1.5 V, are connected in series to form a battery.

Find the e.m.f of the battery.



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6. For how many hours can a 100 W bulb be used to have one unit of electrical energy consumption ?



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Very Short Answer

1. Which is the most convenient form of energy?



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2. When two bodies A and B are rubbed, they acquire charge by friction, If the charge on A is positive, then the charge on B is _____.

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3. _____ is a device used to detect the presence and the nature of the charge on a body.

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4. _____ is used to protect building from lightning.

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5. When charges are moving from one end to the other end of a conductor, we say there is _____ in the conductor.

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6. _____ acts as a positive pole and _____ as a negative pole in a dry cell.

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7. _____ and _____ are two defects of voltaic cell.

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8. Four cells of e.m.f. 2.5 V each are connected in series to form a battery, the e.m.f. of the battery is _____.

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9. _____ or _____ is used to protect electrical appliances from damages due to excess current.

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10. When electric current passes through a wire, _____ field is created around it.

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11. A glass rod P is observed to be attracting an ebonite rod Q , then

- A. P and Q are unchanged bodies.
- B. both P and Q are charged with identical charge.
- C. both P and Q are charged oppositely.
- D. either P is charged, or Q is charged. If both are charged, they are opposite in nature.

Answer: D

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12. An uncharged body X is brought into contact with a negatively charged body Y, then

A. X gains negatively charge.

B. Y loses negative charge.

C. negative charge gained by X is equal to the negative charge lost by

Y.

D. All the above.

Answer: D



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13. Which of the following is not a source of electrical energy ?

A. A cell

B. A battery

C. An electric motor

D. A generator

Answer: C



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14. Which of the following is a false statement about Leclanche cell ?

- A. Electrolyte is a liquid.
- B. Zinc rod and carbon rod acts as negative and positive electrodes.
- C. It can be easily portable form place from place to place.
- D. Dry cell is a modified form of Leclanche cell.

Answer: C



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15. Which of the following is not a depolarizer ?

A. Potassium dichromate

B. Copper sulphate

C. Mercury oxide

D. Manganese dioxide.

Answer: C



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16. Which of the following is not an electrical appliance ?

A. Washing machine

B. TV

C. Fire extinguisher

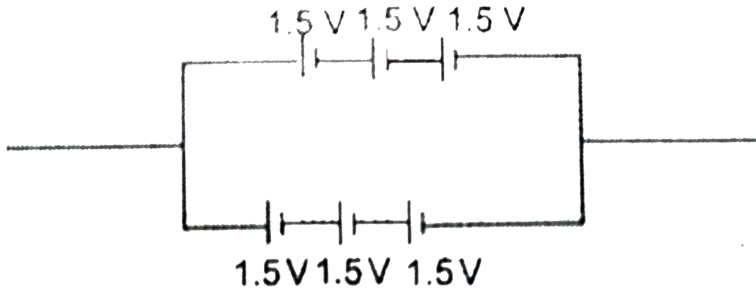
D. Water cooler

Answer: C



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17. Six identical cells are connected as shown in the circuit. The total e.m.f is _____



A. 1.5 V

B. 4.5 V

C. 9 V

D. 0 V

Answer: B



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18. Which of the following statements is false about using household electrical appliances ?

- A. Appliances with ISI mark is to be used.
- B. Switches may be used with wet bands.
- C. Fingers of metallic wires should not be kept in sockets.
- D. To know the presence of current, tester is to be

Answer: B



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19. Electromagnet

- A. Electric motor
- B. Electric generator
- C. Electric bell
- D. Telegraph

Answer: C



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20. Which of the following do not use the principle of 'chemical effect of electric current' ?

- A. Telephone
- B. Purification of metals
- C. Electroplating
- D. Electro typing

Answer: A



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21. In which of the following electrical appliances the principle of the magnetic effect of electric current is used?

- A. electric heater
- B. electric motor
- C. electric bell
- D. Both (b) and (c)

Answer: D

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22. Choose the correct statement : -

(A) In case of an electric cell, chemical energy is converted into electrical energy.

(B) combination of electric cells is called battery.

- A. only A is true
- B. only B is true
- C. Both A and B are true
- D. Both A and B are false

Answer: C



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23. A negatively charged body is connected to the ground, then choose the correct statement.

(A) It becomes positively charged.

(B) Electrons flow from the body to the ground.

A. Only A is true

B. Only B is true

C. Both A and B are true

D. Both A and B are false

Answer: B



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24. A current carrying conductor can produce which of the following?

- A. only heat
- B. only magnetic field
- C. Both heat and magnetic field
- D. None of the above

Answer: C



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25. An electric motor converts

- A. electrical energy into mechanical energy.
- B. mechanical energy into electrical energy.
- C. heat energy into electrical energy.
- D. None of the above

Answer: A

 [Watch Video Solution](#)

26. Which of the following is a bad conductor of electricity ?

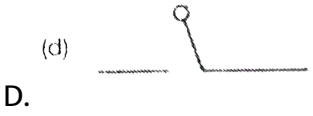
- A. gold
- B. copper
- C. alcohol
- D. living plant

Answer: C

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27. Pick out the symbol of a battery ?

- A. 



Answer: B

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28. Unit of electromotive force is

A. volt

B. second

C. metre

D. ms^{-1}

Answer: A

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29. Name the device that can be used to detect the presence of current in a circuit

- A. magnetic compass
- B. cell
- C. an inverter
- D. voltmeter

Answer: A



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30. Write the following steps in sequential order to explain the working of an electric bell.

(A) When current passes through the coil, it behaves like a magnet and attracts (pulls) the iron strip.

(B) No more does not coil behave as an electromagnet and the

attraction between the coil and the iron strip is lost. Because of this the iron strip gets back to its original position and touches the screw.

(C) The hammers connected to iron strip also moves and strikes the gong because of which, sound is produced.

(D) When the iron strip is pulled towards the coil, it loses contact with the screw and the circuit becomes open circuit.

(E). Once again the circuit is closed , and the above process is repeated.

A. ABCDE

B. EDCBA

C. BADEC

D. ACDBE

Answer: D



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31. What is the correct order of following steps for an experiment to prove that like charges repel each other?

(A) Take two glass rods.

(B) Now bring these two charged rods nearer.

(B) Now bring these two charged rods nearer.

(C) Charge them by rubbing each glass rod with a silk cloth.

(D) The glass rods equal other showing that like charges repel each other.

A. ABCD

B. ACBD

C. DCBA

D. BDAC

Answer: B


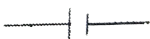


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32. Match the column the entries given in Column A with the appropriate ones in Column B.

Column A

Column B

- | | | |
|----------------------|-----|--|
| A. A cell | () | a.  |
| B. An open tap key | () | b. Lightning rod |
| C. Electric power | () | c.  |
| D. Benjamin Franklin | () | d. Magnetic effect of electric current |
| E. Electric bell | () | e. Eel fish |



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33. Match the following columns

Column A		Column B
A. Button cells	() a.	Purifying zinc
B. Electrolysis	() b.	Operating calculators and wrist watches
C. Depolarisers	() c.	—•—•—
D. Electric fuse	() d.	Convert hydrogen into water
E. Tap key in closed condition	() e.	Heating effect of electric current
F. Porous pot	f.	Powdered carbon and manganese dioxide



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34. How many types of charges are there and what are they ?



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35. What is an electron ? State its relative mass and charge.



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36. What is an electroscope?



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37. When do we say that there is an electric current in a conductor ?



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38. What is an electric circuit ?



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39. What is a switch and how is it connected?



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40. Name two different ways of connecting components in an electric circuit.



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41. How many types of sockets are in use and what are they ?



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42. What is a miniature circuit breaker ? Where is it used ?



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43. What is the e.m.f of the Bichromate cell ?



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44. How can we describe the force between two charged bodies ?

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45. Which charged particle is free to move within the body as well as from one body to another body ?

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46. Distinguish between conductors and insulators.

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47. What any two sources of electrical energy.

 [Watch Video Solution](#)

48. What is a battery ?

 [Watch Video Solution](#)

49. What is an electric generator .

 [Watch Video Solution](#)

50. What is 'one unit' or 'one kilowatthour' of electrical energy ?

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51. What is a fuse ?

 [Watch Video Solution](#)

52. What happens when current passes through an electrolyte ?



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53. Why are thick wires used in fuses ?



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54. Which is the most convenient form of energy?



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55. When two bodies A and B are rubbed, they acquire charge by friction, If the charge on A is negative, then the charge on B is _____.



[Watch Video Solution](#)

56. _____ is a device used to detect the presence and the nature of the charge on a body.



[Watch Video Solution](#)

57. _____ is used to protect buildings from lightning.



[Watch Video Solution](#)

58. When charges are moving from one end to the other end of a conductor, we say there is _____ in the conductor.



[Watch Video Solution](#)

59. _____ acts as a negative pole and _____ as a positive pole in a dry cell.



[Watch Video Solution](#)

60. _____ and _____ are two defects of a voltaic cell.



[Watch Video Solution](#)

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61. Four cells of e.m.f. 2.5 V each are connected in series to form a battery, the e.m.f. of the battery is _____.

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62. _____ or _____ is used to protect electrical appliances from damages due to excess current.

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63. When electric current passes through a wire, _____ field is created around it.

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64. A glass rod P is observed to be attracting an ebonite rod Q, then

- A. P and Q are uncharged bodies.
- B. both P and Q are charged with identical charge.
- C. both P and Q are charged oppositely.
- D. either P is charged, or Q is charged. If both are charged, they are opposite in nature.

Answer: D



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65. An uncharged body X is brought into contact with a negatively charged body Y, then

- A. X gains negatively charge.
- B. Y loses negative charge.
- C. negative charge gained by X is equal to the negative charge lost by Y.

D. All the above.

Answer: D



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66. Which of the following is not a source of electrical energy ?

A. A cell

B. A battery

C. An electric motor

D. A generator

Answer: C



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67. Which of the following is a false statement about Leclanche cell ?

- A. Electrolyte is a liquid.
- B. Zinc rod and carbon rod acts as negative and positive electrodes.
- C. It can be easily portable form place from place to place.
- D. Dry cell is a modified form of Leclanche cell.

Answer: C

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68. Which of the following is not a depolarizer ?

- A. Potassium dichromate
- B. Copper sulphate
- C. Mercury oxide
- D. Manganese dioxide.

Answer: C

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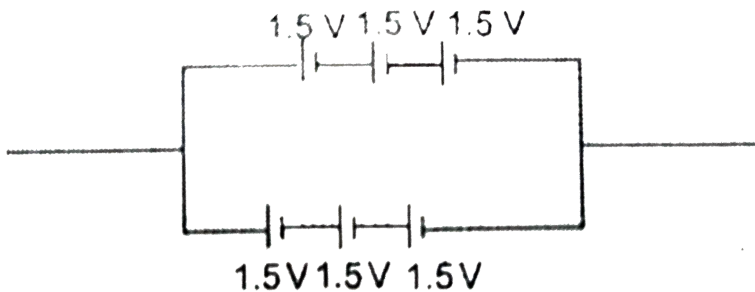
69. What is the main purpose of earthing an electrical appliance ?

- A. Washing machine
- B. TV
- C. Fire extinguisher
- D. Water cooler

Answer: C

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70. Six identical cells are connected as shown in the circuit. The total e.m.f is _____



A. 1.5 V

B. 4.5 V

C. 9 V

D. 0 V

Answer: B



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71. Which of the following statements is false about using household electrical appliances ?

A. Appliances with ISI mark is to be used.

B. Switches may be used with wet bands.

C. Fingers of metallic wires should not be kept in sockets.

D. To know the presence of current, tester is to be

Answer: B

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72. Which of the following devices does not work on the principle of magnetic effects of electric current?

- A. Electromagnet
- B. Electric motor
- C. Electric generator
- D. Telegraph

Answer: C

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73. In which of the following the principle of 'chemical effect of electricity' is not used ?

- A. Telephone

B. Purification of metals

C. Electroplating

D. Electro typing

Answer: A



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74. Which of the following electrical appliances works on the principle of the magnetic effect of electric current ?

A. electric heater

B. electric motor

C. electric bell

D. Both (b) and (c)

Answer: D



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75. Choose the correct statement : -

(A) In case of an electric cell, chemical energy is converted into electrical energy.

(B) combination of electric cells is called battery.

A. only A is true

B. only B is true

C. Both A and B are true

D. Both A and B are false

Answer: C



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76. A negatively charged body is connected to the ground, then choose the correct statement.

(A) It becomes positively charged.

(B) Electrons flow from the body to the ground.

A. Only A is true

B. Only B is true

C. Both A and B are true

D. Both A and B are false

Answer: A



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77. A current carrying conductor produces _____

A. only heat

B. only magnetic field

C. Both heat and magnetic field

D. None of the above

Answer: C



Watch Video Solution

78. An electric motor converts

- A. electrical energy into mechanical energy.
- B. mechanical energy into electrical energy.
- C. heat energy into electrical energy.
- D. None of the above

Answer: A



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79. Which of the following is a bad conductor of electricity

- A. gold

B. copper

C. alcohol

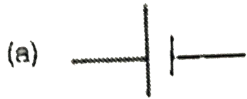
D. living plant

Answer: C



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80. Which of the following is the symbol of a battery ?



A.



B.



C.



D.

Answer: B



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81. Unit of electromotive force is

- A. volt
- B. second
- C. metre
- D. ms^{-1}

Answer: A



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82. The device that can be used to detect the presence of current in a circuit is _____

- A. magnetic compass
- B. cell

C. an inverter

D. voltmeter

Answer: A



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83. Write the following steps in sequential order to explain the working of an electric bell.

(A) When current passes through the coil, it behaves like a magnet and attracts (pulls) the iron strip.

(B) No more does not coil behave as an electromagnet and the attraction between the coil and the iron strip is lost. Because of this the iron strip gets back to its original position and touches the screw.

(C) The hammers connected to iron strip also moves and strikes the gong because of which, sound is produced.

(D) When the iron strip is pulled towards the coil, it loses contact with the screw and the circuit becomes open circuit.

(E). Once again the circuit is closed , and the above process is repeated.

A. ABCDE

B. EDCBA

C. BADEC

D. ACDBE

Answer: D



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84. Write the following steps in sequential order to prove that like charges repel each other.

(A) Take two glass rods.

(B) Now bring these two charged rods nearer.

(C) Charge them by rubbing each glass rod with a silk cloth.

(D) The glass rods equal other showing that like charges repel each other.

A. ABCD

B. ACBD

C. DCBA

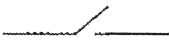
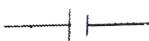
D. BDAC

Answer: B



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85. Match the column the entries given in Column A with the appropriate ones in Column B.

Column A		Column B
A. A cell	()	a. 
B. An open tap key	()	b. Lightning rod
C. Electric power	()	c. 
D. Benjamin Franklin	()	d. Magnetic effect of electric current
E. Electric bell	()	e. Eel fish



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86. Match the following columns

Column A

Column B

- | | | |
|--------------------------------|-----|---|
| A. Button cells | () | a. Polymers |
| B. Electrolysis | () | b. Operating calculators and wrist watches |
| C. Depolarisers | () | c. $\text{---} \cdot \text{---} \cdot \text{---}$ |
| D. Electric fuse | () | d. Convert hydrogen into water |
| E. Tap key in closed condition | () | e. Heating effect of electric current |
| F. Porous pot | | f. Powdered carbon and manganese dioxide |



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87. How many types of combination of resistors are there and what are they?



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88. What is an electron ?



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89. What is an electroscope?



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90. When do we say that there is an electric current in a conductor ?



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91. What is an electric circuit ?



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92. What is a switch ?



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93. Name two different ways of connecting components in an electric circuit.

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94. How many types of sockets are in use and what are they ?

[Watch Video Solution](#)

95. What is a miniature circuit breaker ? Where is it used ?

[Watch Video Solution](#)

96. What is the e.m.f of the Bichromate cell ?

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97. State Coulomb's law of electric force between two charged bodies.

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98. When two charged bodies at different potentials are connected by a conducting wire, then the charge flows from one body to another body

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99. CONDUCTORS AND INSULATORS

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100. What any two sources of electrical energy.

 [Watch Video Solution](#)

101. What is a battery ?



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102. What is the function of brushes in an electric generator ?



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103. What is 'one unit' or 'one kilowatthour' of electrical energy ?



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104. What is a fuse ?



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105. What happens when current passes through an electrolyte ?



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106. Why are thick wires not used in fuses ?



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Short Type Qns

1. Describe how we can charge a body by friction.



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2. Write a short note on lightning conductor.



[Watch Video Solution](#)

3. Describe Leclanche cell.



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4. Write a short note on parallel and series connections of cells.



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5. What are the precautions to be taken in using house-hold electrical appliances?



[Watch Video Solution](#)

6. How can we charge a body by conduction ?



[Watch Video Solution](#)

7. Distiguish between open and closed circuites.



[Watch Video Solution](#)

8. Describe dry cell.

 [Watch Video Solution](#)

9. Write a short note on (a) short circuit and (b) overload.

 [Watch Video Solution](#)

10. Write the uses of electromagnets.

 [Watch Video Solution](#)

11. Describe 'electroscope' and explain briefly how it works.

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12. Three cells of 1.5V, 2.5V and 3.5 V, respectively, are connected in series to form a battery. Find the e.m.f of the battery.



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13. Describe a dynamo.



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14. What is an electromagnet ? How the strength of the electromagnet can be increased ?



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15. Write the major defects in Voltaic cell.



[Watch Video Solution](#)

16. Describe how we can charge a body by friction.

 [Watch Video Solution](#)

17. Write a short note on lightning conductor.

 [Watch Video Solution](#)

18. Describe Leclanche cell.

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21. How can a body be charged by conduction ?

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22. Distiguish between open and closed circuites.

 [Watch Video Solution](#)

23. Describe dry cell.

 [Watch Video Solution](#)

24. Write a short note on (a) short circuit and (b) overload.



Watch Video Solution

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Watch Video Solution

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Watch Video Solution

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 [Watch Video Solution](#)

29. What is an electromagnet ? How the strength of the electromagnet can be increased ?

 [Watch Video Solution](#)

30. Write the major defects in Voltaic cell.

 [Watch Video Solution](#)

Essay Type Qns

1. What is 'electrical induction'?

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2. Describe Voltaic cell and write the major defects of it.

 [Watch Video Solution](#)

3. HEATING EFFECT OF ELECTRIC CURRENT

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4. Write a short note on electric bell.

 [Watch Video Solution](#)

5. What are the advantages and disadvantage of con-necting bulbs in parallel and in series ?

 [Watch Video Solution](#)

6. What is magnetic effect of electric current.

 [Watch Video Solution](#)

7. Describe chemical effects of electric current with an example.

 [Watch Video Solution](#)

8. Explain about Bichromate cell with a neat labelled diagram.

 [Watch Video Solution](#)

9. Write a note on 'electrical induction'.

 [Watch Video Solution](#)

10. Describe Voltaic cell and write the major defects of it.

 [Watch Video Solution](#)

11. Describe with an example 'heating effects of electric current'.

 [Watch Video Solution](#)

12. Write a short note on electric bell.

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13. What are the advantages and disadvantage of con-necting bulbs in parallel and in series ?

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15. Describe chemical effects of electric current with an example.

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16. Explain about Bichromate cell with a neat labelled diagram.

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Concept Application

1. A neutral body means a body with no charged particles on it.

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2. A neutral body means a body with no charged particles on it.

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Level I

1. The charged particle in an atom that contributes positive charge is 'electron'.

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2. State True or False.

Substances which allow charges to pass through them are called conductors.

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3. A Switch is used to make or brake an electric circuit.

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4. The Zinc plate in a voltaic cell is usually coated with mercury to prevent polarization.

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5. when bulbs are conneted to the same source, the brightness of bulb connected in series is more than the brightness of identical bulbs connected in parallel.

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6. In household connections, no current passes through neutral wire when the switch is off.

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7. Connecting many devies to a single socket leads to 'short circuit'

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8. Nichrome' is the material used to make heating elements.

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9. Electric bell works on 'heating effects of electric current'.

 [Watch Video Solution](#)

10. Atom is considered neutral because it contains an equal number of _____ and _____ charges.

 [Watch Video Solution](#)

11. _____ is a major component of an electric bell.

 [Watch Video Solution](#)

12. Why is nichrome used as a heating element ?

 [Watch Video Solution](#)

13. Materials that do not allow electric charges to flow through them are called _____.

 [Watch Video Solution](#)

14. Lightning is a natural phenomenon involving _____ particles.

 [Watch Video Solution](#)

15. In symbolic representation of an electric cell, the longer and shorter vertical lines represent _____ and _____ terminal, respectively.

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16. Mercury coated on zinc plate prevents the impurities from coming into contact with acid and prevents _____.

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17. ELECTRIC FUSE - A SAFETY DEVICE

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18. When bulbs are connected to the same source, the brightness of bulb connected in parallel is _____ then the brightness of identical bulbs connected in series.

 [Watch Video Solution](#)

19. Electric heater works on the basis of _____ the electric current.

 [Watch Video Solution](#)

20. If a glass rod is positively charged, then it consists of particles with
- A. only positive charge.
 - B. only negative charge.
 - C. both negative and positive charges, but the number of positively charged particles are more than the number of negatively charged particles.
 - D. both negative and positive charged but the number of negatively charged particles are more than the number of positively charged particles.

Answer: A::C::D



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21. A body can be charged by

- A. friction
- B. induction
- C. conduction
- D. All the above.

Answer: D

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22. Which of the following is not a consumer of electrical energy ?

- A. A generator
- B. An electric motor
- C. An electromagnet
- D. A bulb

Answer: A

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23. Find the false statement about a cell.

- A. Group of cells is called battery
- B. Longer line represents positive terminal
- C. Shorter line represents negative terminal.
- D. Cell is a major source of electrical energy.

Answer: D



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24. Three identical cells of e.m.f. $1.5V$ are connected in parallel. The total e.m.f. of the combination is _____.

- A. 1.5
- B. 4.5
- C. 0.5

D. 3

Answer: A



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25. Three bulbs are connected in a circuit in an identical way. When a fourth bulb is also connected to the same circuit in the same way, brightness is reduced then the bulbs are connected in _____

A. series

B. parallel

C. it can happen in both cases

D. It is not possible

Answer: A



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26. How many hours must a 200 W bulb glow to consume 1 unit electrical energy.

- A. 1
- B. 2
- C. 5
- D. 10

Answer: C

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27. The amount of heat produced in a heating element depends on

- A. its length
- B. its cross sectional area
- C. nature of material

D. All the above.

Answer: D



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28. Which of the following statement is /are true about electromagnet ?

- A. It works on the principal of 'magnetic effects of electric current'.
- B. Electromagnets are used in electric bell.
- C. Electromagnets are used to lift heavy loads.
- D. All the above.

Answer: D



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29. A neutral body gets charged when it brought into contact with a charged body. This method of charging a body is called.

- A. charging by conduction
- B. charging by friction
- C. charging by Induction
- D. None of the above

Answer: A



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30. Which of the following electrical appliances work on the principal of the heating effect of electric current ?

- A. Electric iron
- B. Electric heater
- C. Electric bulb

D. All the above.

Answer: D

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31. Choose the correct statement(s) in case of a voltaic cell.

(A) Cathode used is Zn and anode used is copper.

(B) The electrolyte used is dilute sulphuric acid.

A. Only A is true

B. Only B is true

C. Both A and B are true

D. Both A and B are false

Answer: C

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32. Choose the correct statement :

When a positively charged body is placed on the ground.

(A) the electrons flow from the ground and neutralize the charge.

(B) the electrons flow from the ground and charge it negatively.

A. only A is true

B. only B is true

C. Both A and B are true

D. Both A and B are false

Answer: A



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33. A magnetic needle placed near a current carrying conductor deflects due to the

A. heating effect of electric current.

B. magnetic effect of electric current.

C. chemical effect of electrical current.

D. Both (b) and (c)

Answer: B



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34. An electric generator converts :

A. mechanical energy into electrical energy.

B. electrical energy into mechanical energy.

C. chemical energy into electrical energy.

D. chemical energy into mechanical energy.

Answer: A



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35. Which of the following is a good conductor of electricity.

A. impure water

B. glass

C. ebonite

D. wood

Answer: A

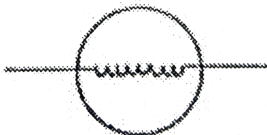


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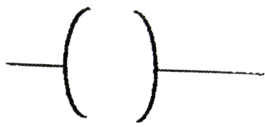
36. Given the symbol of an electric fuse used in circuit diagrams.



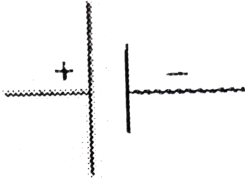
A.



B.



C.



D.

Answer: A



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37. Commercial Unit Of Energy

A. W h

B. kW h

C. Joule

D. None of these

Answer: B



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38. The bulbs in houses are connected in

- A. parallel combination
- B. series combination
- C. series and parallel.
- D. neither in series nor in parallel.

Answer: A



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39. The device used for producing electric current is called a :

- A. speedometer
- B. ammeter
- C. voltmeter

D. kilowatt hour meter

Answer: B



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40. Arrange the following steps in sequential order to demonstrate the magnetic effect of the electric current using magnetic compass.

(A) Wind an insulated conducting wire around the magnetic compass such that the axis of the coil is directed along east west direction and connect the free ends of the wire to a cell through a switch.

(B) Take a magnetic compass.

(C) When current flows through the conducting wire, it behaves as a magnet and deflects the compass needle.

(D) When the switch is closed, the magnetic needle in the compass deflects from its initial position and when the switch is opened, the needle comes back to its initial position.

A. BADC

B. CBAD

C. ACBD

D. ABCD

Answer: A



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41. Two electric bulbs of 100 W each is used for 10 hours in the month of June. Write the following steps in sequential order to find the number of units of electricity consumed in the month of June.

(A) The number of units of electricity consumed by both bulbs in the month of June is the total electrical energy consumed by bulbs expressed in Wh divided by 100 Wh .

(B) Note the rated power of each electric bulb, time of electrical consumption of each bulb per day from the given data.

(C) We know, one electrical unit = $1kWh$ or $1000Wh$.

(D) Calculate the amount of electrical energy consumed by both the

bulbs in the month of June using, (sum of the electrical power of both the bulb) \times (time of consumption in one day) \times 30 days.

A. BACD

B. ABCD

C. BDCA

D. DCBA

Answer: C



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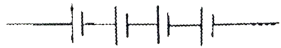
42.

Match

columns

Column A

Column B

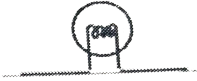
- A. A battery () a. Good conductor
- B. Metal () b. Mechanical energy is converted into electric energy
- C. A generator () c. 
- D. Filament bulb () d. Heating effect of electricity
- E. Ammeter () e. 



Watch Video Solution

Column A

Column B

- 43.
- | | | |
|----------------------------|-----|--|
| A. A cell | () | a. Study of electric charges at rest |
| B. Bulb | () | b. Close or open an electric circuit |
| C. Static electricity | () | c. Substitute for fuse |
| D. Switch | () | d.  |
| E. MCBs | () | e. Prevent unauthorized usage of current |
| F. Main fuse at kW h metre | f. | Converts chemical energy into electrical energy |

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44. The charged particle in an atom that contributes positive charge is 'electron'.

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45. State True or False.

Substances which allow charges to pass through them are called conductors.

 [Watch Video Solution](#)

46. what is the use of switch.

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47. The Zinc plate in a voltaic cell is usually coated with mercury to prevent polarization.

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48. When bulbs are connected to the same source, the brightness of bulb connected in parallel is _____ then the brightness of identical bulbs connected in series.



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49. In household connections, no current passes through neutral wire when the switch is off.



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50. SHORT CIRCUITING



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51. CONDUCTORS AND INSULATORS



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52. Electric bell works on 'heating effects of electric current'.



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53. Atom is considered neutral because it contains an equal number of _____ and _____ charges.



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54. A major component of an electric bell is _____.



[Watch Video Solution](#)

55. Nichrome is the material used to make _____ elements.



[Watch Video Solution](#)

56. Materials that do not allow electric charges to flow through them are called _____.



[Watch Video Solution](#)

57. Lightning

 [Watch Video Solution](#)

58. In symbolic representation of an electric cell, the longer and shorter vertical lines represent _____ and _____ terminal, respectively.

 [Watch Video Solution](#)

59. Mercury coated on zinc plate prevents the impurities from coming into contact with acid and prevents _____.

 [Watch Video Solution](#)

60. _____ is a safety device that prevents excess flow of current through an appliance.

 [Watch Video Solution](#)

 [Watch Video Solution](#)

61. When bulbs are connected to the same source, the brightness of bulb connected in parallel is _____ then the brightness of identical bulbs connected in series.

 [Watch Video Solution](#)

62. Electric heater works on the basis of _____ the electric current.

 [Watch Video Solution](#)

63. If a glass rod is positively charged, then it consists of particles with

A. only positive charge.

B. only negative charge.

C. both negative and positive charges, but the number of positively charged particles are more than the number of negatively charged

particles.

D. both negative and positive charged but the number of negatively charged particles are more than the number of positively charged particles.

Answer: A::C::D

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64. A body can be charged by

- A. friction
- B. induction
- C. conduction
- D. All the above.

Answer: D

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65. Which of the following is not a source of electrical energy ?


- A. A generator
- B. An electric motor
- C. An electromagnet
- D. A bulb

Answer: A



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66. Find the false statement about a cell.

- A. Symbol of a cell is 
- B. Longer line represents positive terminal
- C. Shorter line represents negative terminal.

D. Cell is a major source of electrical energy.

Answer: D



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67. Three identical cells of e.m.f. $1.5V$ are connected in parallel. The total e.m.f. of the combination is _____.

A. 1.5

B. 4.5

C. 0.5

D. 3

Answer: A



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68. CONDUCTORS AND INSULATORS



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69. How many hours must a 200 W bulb glow to consume 1 unit electrical energy.

- A. 1
- B. 2
- C. 5
- D. 10

Answer: C



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70. The amount of heat produced in a heating element depends on

- A. its length
- B. its cross sectional area
- C. nature of material
- D. All the above.

Answer: D

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71. Which of the following statement is /are true about electromagnet ?

- A. It works on the principal of 'magnetic effects of electric current'.
- B. Electromagnets are used in electric bell.
- C. Electromagnets are used to lift heavy loads.
- D. All the above.

Answer: D

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72. A neutral body gets charged when it brought into contact with a charged body. This method of charging a body is called.

- A. charging by conduction
- B. charging by friction
- C. charging by Induction
- D. None of the above

Answer: A



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73. Which of the following electrical appliances work on the principal of the heating effect of electric current ?

- A. Electric iron
- B. Electric heater

C. Electric bulb

D. All the above.

Answer: D

 [Watch Video Solution](#)

74. Choose the correct statement(s) in case of a voltaic cell.

(A) Cathode used is Zn and anode used is copper.

(B) The electrolyte used is dilute sulphuric acid.

A. Only A is true

B. Only B is true

C. Both A and B are true

D. Both A and B are false

Answer: C

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75. Choose the correct statement :

When a positively charged body is placed on the ground.

(A) the electrons flow from the ground and neutral-ize the charge.

(B) the electrons flow from the ground and charge it negatively.

A. only A is true

B. only B is true

C. Both A and B are true

D. Both A and B are false

Answer: A



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76. A magnetic needle placed near a current carrying conductor deflects due to the

A. heating effect of electric current.

- B. magnetic effect of electric current.
- C. chemical effect of electrical current.
- D. Both (b) and (c)

Answer: B



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77. An electric generator (Dynamo) converts

- A. mechanical energy into electrical energy.
- B. electrical energy into mechanical energy.
- C. chemical energy into electrical energy.
- D. chemical energy into mechanical energy.

Answer: A



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78. Which of the following is a good conductor of electricity.

A. impure water

B. glass

C. ebonite

D. wood

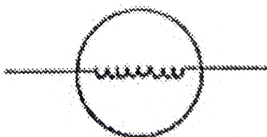
Answer: A

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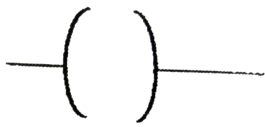
79. Given the symbol of an electric fuse used in circuit diagrams.



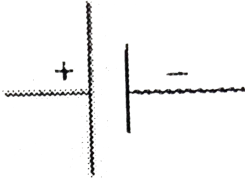
A.



B.



C.



D.

Answer: A



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80. What is the commercial unit of electrical energy ? Represent it in terms of joules.

A. W h

B. kW h

C. Joule

D. None of these

Answer: B



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81. The bulbs in houses are connected in

- A. parallel combination
- B. series combination
- C. series and parallel.
- D. neither in series nor in parallel.

Answer: A



[Watch Video Solution](#)

82. The device used to measure electric current in a circuit is called _____

- A. speedometer
- B. ammeter
- C. voltmeter

D. kilowatt hour meter

Answer: B

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83. Arrange the following steps in sequential order to demonstrate the magnetic effect of the electric current using magnetic compass.

(A) Wind an insulated conducting wire around the magnetic compass such that the axis of the coil is directed along east west direction and connect the free ends of the wire to a cell through a switch.

(B) Take a magnetic compass.

(C) When current flows through the conducting wire, it behaves as a magnet and deflects the compass needle.

(D) When the switch is closed, the magnetic needle in the compass deflects from its initial position and when the switch is opened, the needle comes back to its initial position.

A. BADC

B. CBAD

C. ACBD

D. ABCD

Answer: A



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84. Two electric bulbs of 100 W each is used for 10 hours in the month of June. Write the following steps in sequential order to find the number of units of electricity consumed in the month of June.

(A) The number of units of electricity consumed by both bulbs in the month of June is the total electrical energy consumed by bulbs expressed in Wh divided by 100 Wh .

(B) Note the rated power of each electric bulb, time of electrical consumption of each bulb per day from the given data.

(C) We know, one electrical unit = $1kWh$ or $1000Wh$.

(D) Calculate the amount of electrical energy consumed by both the

bulbs in the month of June using, (sum of the electrical power of both the bulb) \times (time of consumption in one day) \times 30 days.

A. BACD

B. ABCD

C. BDCA

D. DCBA

Answer: C



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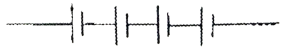
85.

Match

columns

Column A

Column B

- A. A battery () a. Good conductor
- B. Metal () b. Mechanical energy is converted into electric energy
- C. A generator () c. 
- D. Filament bulb () d. Heating effect of electricity
- E. Ammeter () e. 

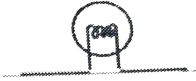


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Column A

Column B

86.

- | | |
|----------------------------|--|
| A. A cell | () a. Study of electric charges at rest |
| B. Bulb | () b. Close or open an electric circuit |
| C. Static electricity | () c. Substitute for fuse |
| D. Switch | () d.  |
| E. MCBs | () e. Prevent unauthorized usage of current |
| F. Main fuse at kW h metre | f. Converts chemical energy into electrical energy |

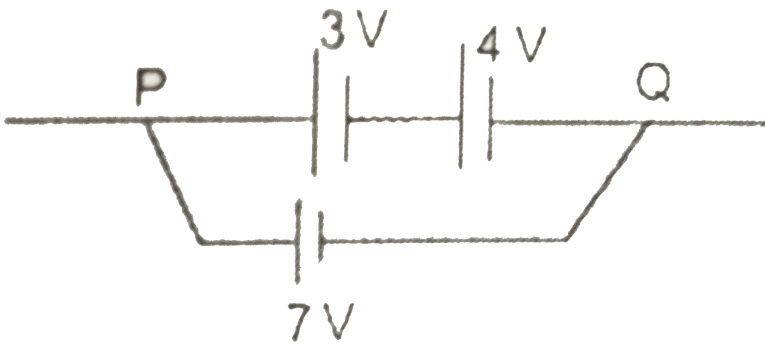


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Level II

1. Three batteries are connected as shown in the figure.

Then the total emf in the circuit is ____ V.

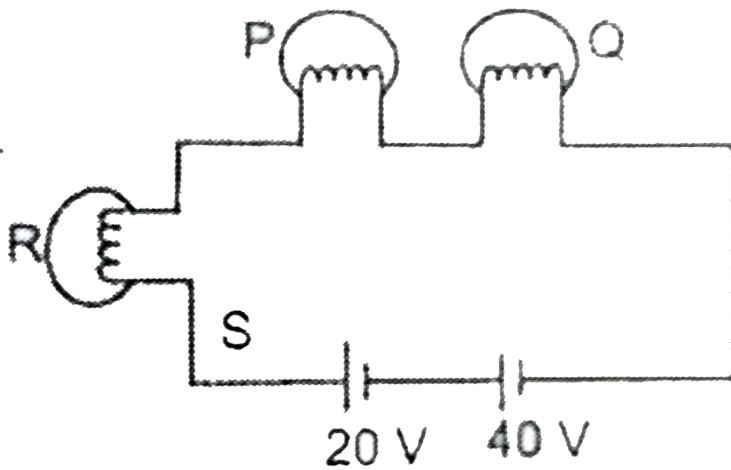


- A. 3
- B. 4
- C. 7
- D. 14

Answer: C

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2. Three identical bulbs are connected as shown in figure. Choose the correct statement.



- A. All bulbs are in a series combination.
- B. If bulb R is removed, bulb P and Q will still glow.
- C. The total e.m.f in the circuit is 40 V.
- D. The given circuit is an open circuit.

Answer: A

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3. A positively charged body is brought in contact with the cap of gold leaf electroscope. Whose strips are neutral, then

- A. positively charge flows from the body to the strips and both the strips acquire positive charge.
- B. due to like charged on strips , they attract each other.
- C. if a positively charged body is removed the gap between the strips decreases.
- D. Both (a) and (c).

Answer: A



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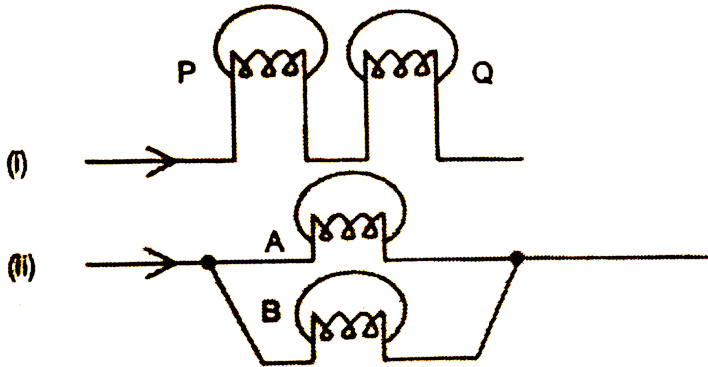
4. Choose the correct statement:

When the same current(i) flows through two circuits as shown in the figures, then (assume that all bulbs are identical)

(A) bulbs in first combination glow with more brightness.

(B) bulbs in second combination glow with more brightness.

(C) bulbs in both the combination glow with equal brightness.



- A. Only A is true
- B. Only B is true
- C. Both A and B are true
- D. Cannot be determined

Answer: A

[▶ Watch Video Solution](#)

5. What happens when a glass rod is rubbed against a silk cloth?

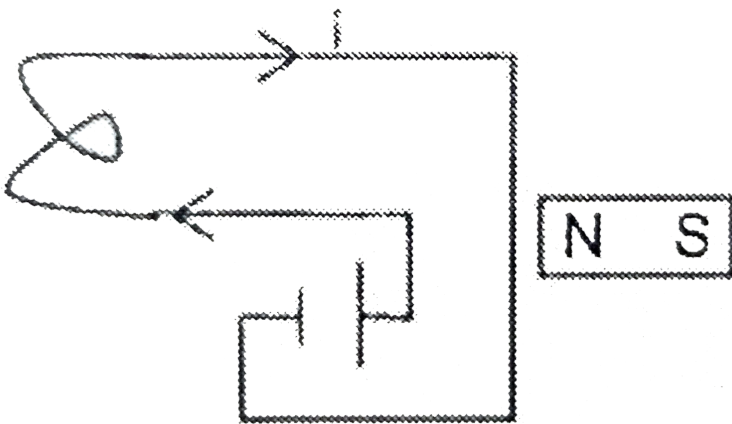
- A. the glass and acquires a positive charge due to loss of electrons.

- B. the silk cloth acquires negative charges due to gain of electrons.
- C. if these two bodies are again brought in contact the net charge on them is zero.
- D. All the above.

Answer: D

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6. A magnet is brought close to a current carrying conductor as shown in figure, then



A. it will be repelled by the conductor.

B. it will be attracted by the conductor

C. it will not show any effect.

D. it will be just deflected.

Answer: D

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7. Three dry cells are connected as shown in the



figure. If e.m.f

of each cell is 2 V, then the e.m.f. of the combination is _____ V.

A. 2

B. 6

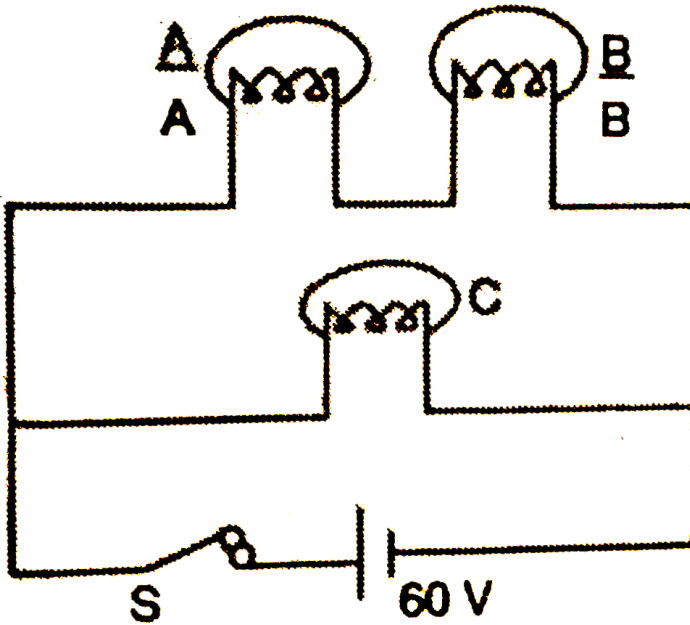
C. 3

D. 4

Answer: B

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8. Choose the correct statement about the given circuit: Three identical bulbs are connected as shown in the figure.



A. Bulbs A and B are in parallel with bulb C.

B. The potential (e.m.f) in the circuit is 60 V.

C. When switch 'S' is turned on all bulbs glow with the same brightness.

D. Both (a) and (b)

Answer: D



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9. What will happen to the strips of a positively charged electroscope when a positively charged and another negatively charged bodies with equal magnitude of charge are brought simultaneously in contact with the cap of a positively charged electroscope?

A. move apart.

B. come closer.

C. remains unaffected

D. Cannot be determined

Answer: B



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10. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero
- C. it consists of equal positive and negative charge.
- D. Both (a) and (c).

Answer: D



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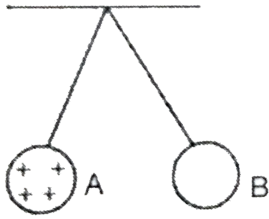
11. What happens when a current carrying metallic comb is placed close to small iron filings?

- A. iron filings will fly away from the comb, when switch is turned off.
- B. iron filings align in the direction of the magnetic field produced around the metallic comb.
- C. iron filings will be attracted by the comb.
- D. Both (a) and (b)

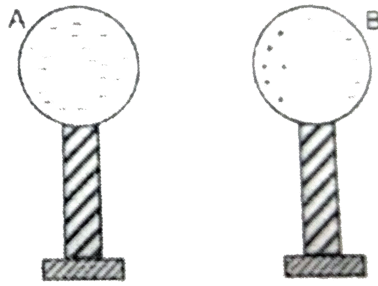
Answer: B

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12. (a) Two charged bodies, A and B are suspended from a fixed point with the help of silk threads as shown in the figure. If A is positively charged can we identify the nature of charge on 'B' ?



(a)



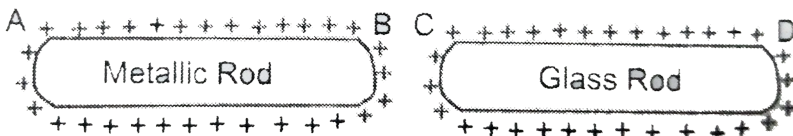
(b)

(b) A negatively charged conducting sphere A and a neutral sphere B are kept on insulating stands and brought close to each other. The charge distribution is as shown in the figure.

Is B charged? What type of force exists between A and B?

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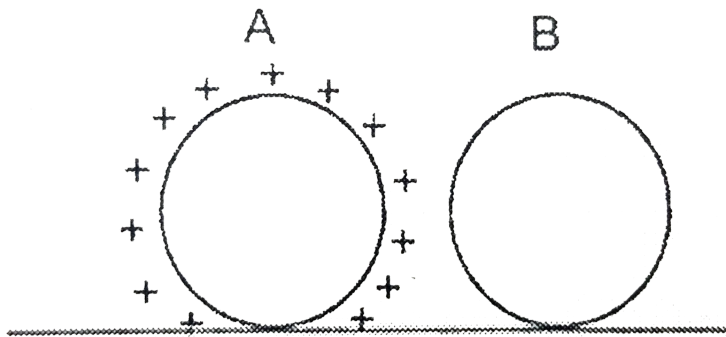
13. Raghavan found a metallic rod AB and a glass rod CD both positively charged and placed on an insulating table. He wanted to know what would happen to the charges on AB and CD if he touched both the rod at A and C? Discuss.





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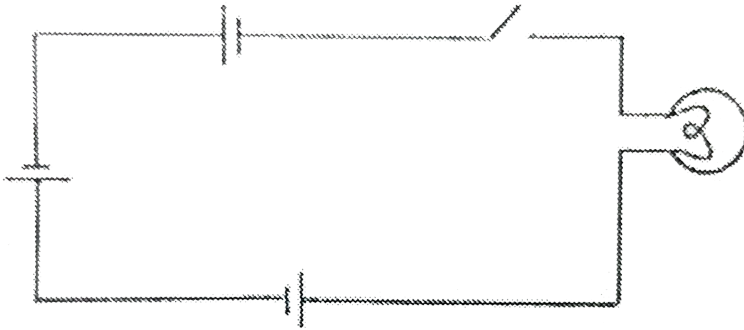
14. Two identical, small metallic spheres A and B are placed side by side on an insulating smooth table as shown in the figure. If A is positively charged and held fixed with the table, discuss the motion of B.



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15. Observe the circuit and state whether the cells are connected in series or parallel. If each cell is of e.m.f. $1.5V$, then find the total e.m.f applied

across the bulb connected.



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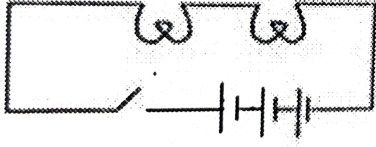
16. Three identical cells of e.m.f. $1.5V$ are given. Find how we can arrange them to get a total e.m.f. of

(a) $1.5V$, (b) $3V$, (c) $4.5V$.

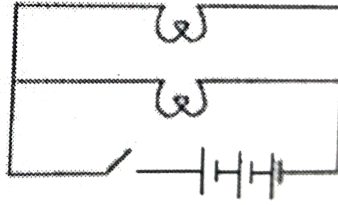
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17. Prahar took two identical heating elements and connected them to a battery in two different ways as shown in the figure. When he switched ON the switch, is the heat developed in each element the same or

different in both the cases ?



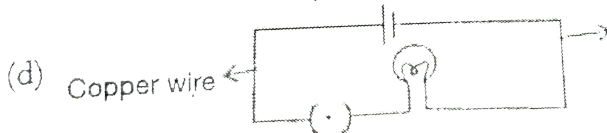
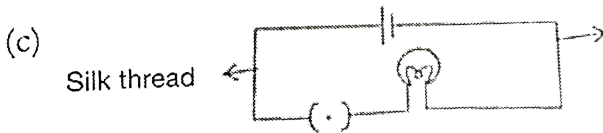
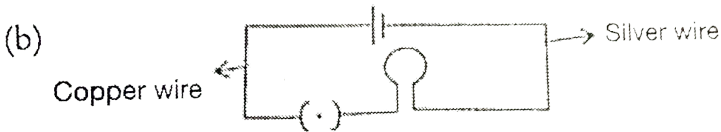
(a)



(b)

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18. Identify whether the following circuits are open or closed.



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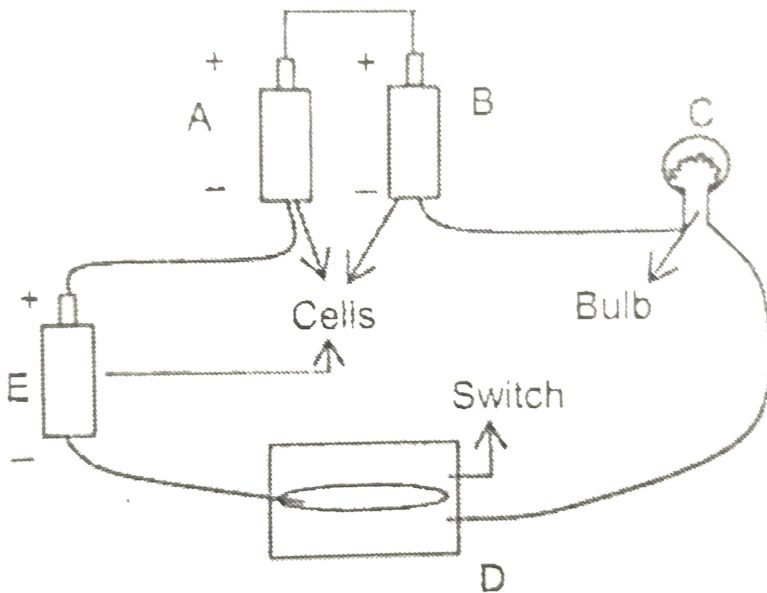
19. What is the nature of materials used to make the 'filament' of an electric bulb and the 'fuse wire' used in electric fuse ? Compare them.

 [Watch Video Solution](#)

20. Define live and neutral wires.

 [Watch Video Solution](#)

21. Represent the connections shown below by a circuit diagram.



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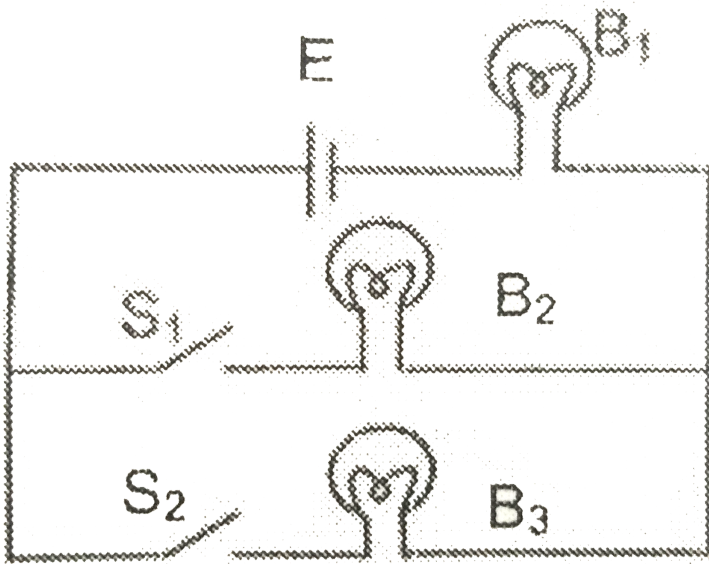
22. We observe the bulb glowing when the switch is 'ON'. Can we conclude that charges instantly move from the 'switch' to the bulb? Discuss.

[▶ Watch Video Solution](#)

23. What is a depolarizer and how does it work ?

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24. Gourang made an electric circuit with three bulbs B_1 , B_2 and B_3 a cell and two switches S_1 and S_2 as shown in figure. He notes his observation when



(a) S_1 is closed and S_2 is open,

(b) S_2 is closed and S_1 is open.

He also found that a bulb whose failure made the circuit 'open' irrespective of the status of S_1 and S_2 . What are his observations?

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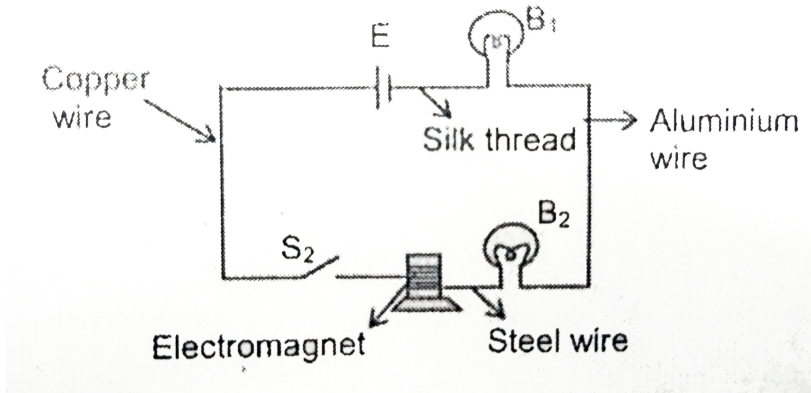
25. Saket was repairing an electric bell. By mistake, instead of an electromagnet, he placed a permanent magnet in the electric bell. Explain, what changes do you observe.

 [Watch Video Solution](#)

26. Ravinder was inspired by reading the autobiography of Thomas Alva Edison and changed a portion of his room into a laboratory. In his laboratory he performed an activity that demonstrates both 'heating effect' and 'magnetic effect' of electric current. He connected different components with different wires and the connections are represented by the following circuit diagram.

To his disappointment, he was not successful in his effort. Observe the

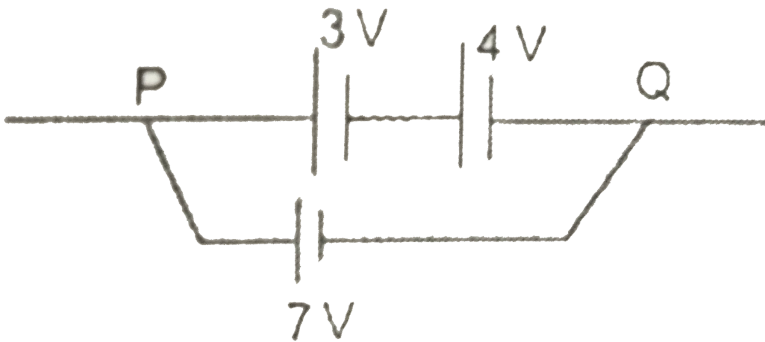
circuit and suggest modifications to make his effort successful.



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27. Three batteries are connected as shown in the figure.

Then the total emf in the circuit is ____ V.



A. 3

B. 4

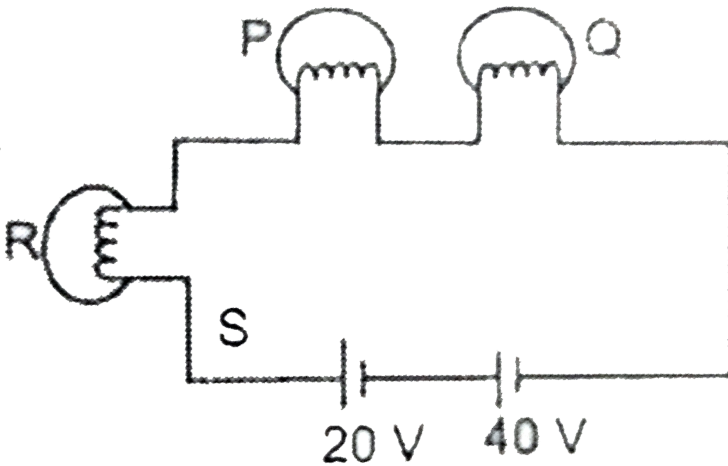
C. 7

D. 14

Answer: C

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28. Three identical bulbs are connected as shown in figure. Choose the correct statement.



A. All bulbs are in a series combination.

B. If bulb R is removed, bulb P and Q will still glow.

C. The total e.m.f in the circuit is 40 V.

D. The given circuit is an open circuit.

Answer: A



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29. A positively charged body is brought in contact with the cap of gold leaf electroscope. Whose strips are neutral, then

A. positively charge flows from the body to the strips and both the strips acquire positive charge.

B. due to like charged on strips, they attract each other.

C. if a positively charged body is removed the gap between the strips decreases.

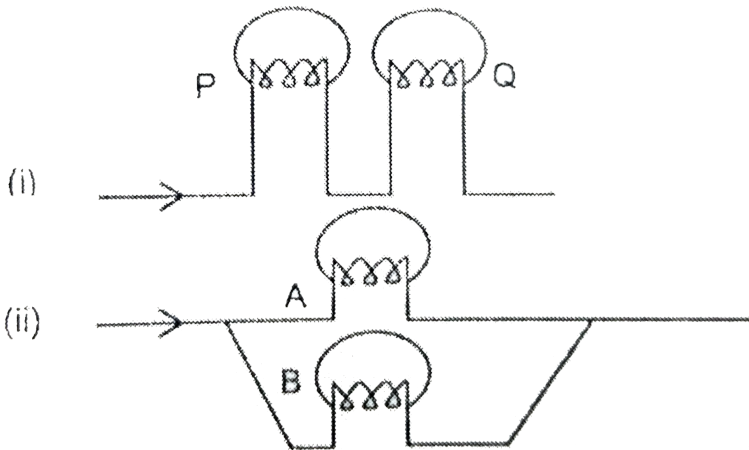
D. Both (a) and (c).

Answer: A

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30. Choose the correct statement:

When the same current (i) flows through two circuits as shown in the figures then (assume that all bulbs are identical)



- A. In circuit (i) bulbs glow with more brightness then circuit (ii)
- B. In circuit (ii) bulbs glow with more brightness then circuit (i)
- C. In both circuits bulbs glow with same brightness
- D. Cannot be determined

Answer: A



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31. A glass rod is rubbed against a silk cloth, then

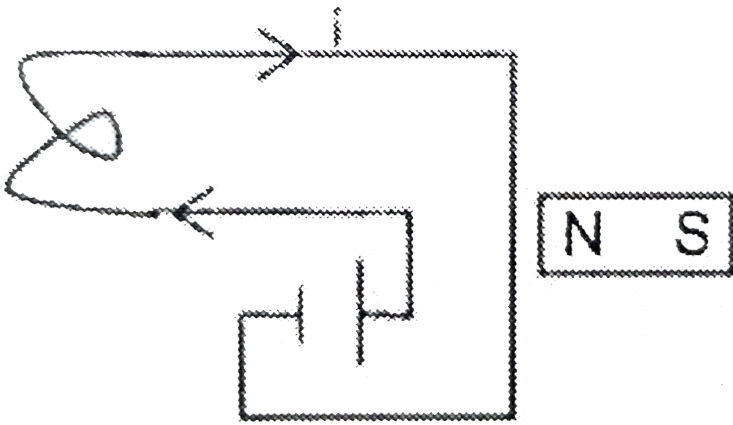
- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charges due to gain of electrons.
- C. if these two bodies are again brought in contact the net charge on them is zero.
- D. All the above.

Answer: D



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32. A magnet is brought close to a current carrying conductor as shown in figure, then



- A. it will be repelled by the conductor.
- B. it will be attracted by the conductor
- C. it will not show any effect.
- D. it will be just deflected.

Answer: D



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33. Three dry cells are connected as shown in the



figure. If e.m.f

of each cell is 2 V, then the e.m.f. of the combination is _____ V.

A. 2

B. 6

C. 3

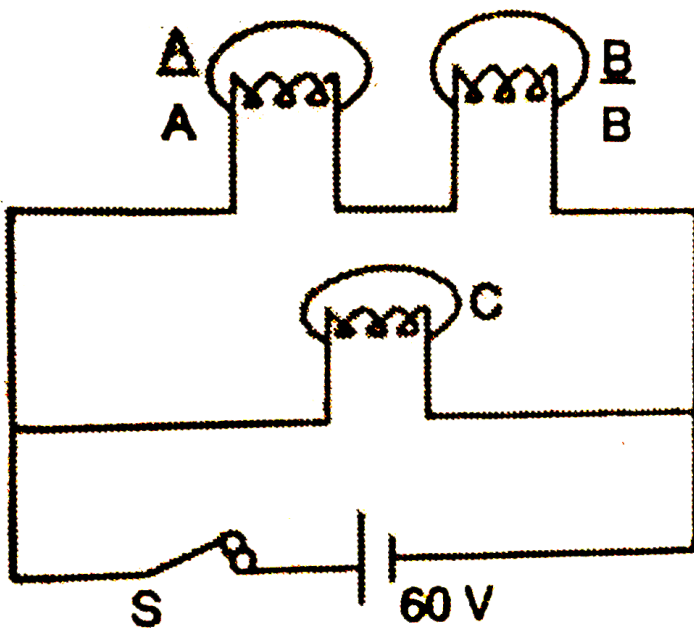
D. 4

Answer: B



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34. Choose the correct statement about the given circuit: Three identical bulbs are connected as shown in the figure.



- A. Bulbs A and B are in parallel with bulb C.
- B. The potential (e.m.f) in the circuit is 60 V.
- C. When switch 'S' is turned on all bulbs glow with the same brightness.
- D. Both (a) and (b)

Answer: D

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35. When a positively charged and another negatively charged bodies with equal magnitude of charge are brought simultaneously in contact with the cap of a positively charged electroscope, then the strips

- A. move apart.
- B. come closer.
- C. remains uneffected
- D. Cannot be determined

Answer: B



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36. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero

C. it consists of equal positive and negative charge.

D. Both (a) and (c).

Answer: D



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37. What happens when a current carrying metallic comb is placed close to small iron filings?

A. iron filings will fly away from the comb, when switch is turned off.

B. iron filings align in the direction of the magnetic field produced around the metallic comb.

C. iron filings will be attracted by the comb.

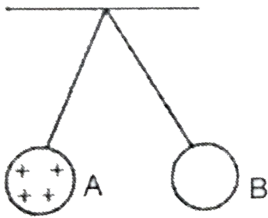
D. Both (a) and (b)

Answer: B

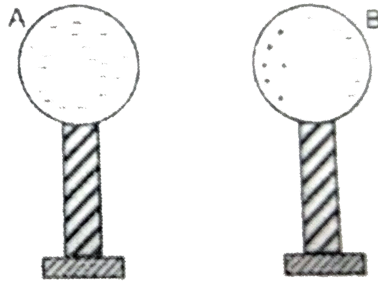


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38. (a) Two charged bodies, A and B are suspended from a fixed point with the help of silk threads as shown in the figure. If A is positively charged can we identify the nature of charge on 'B' ?



(a)



(b)

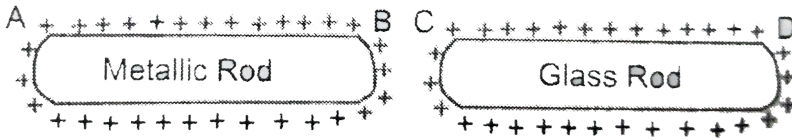
(b) A negatively charged conducting sphere A and a neutral sphere B are kept on insulating stands and brought close to each other. The charge distribution is as shown in the figure.

Is B charged ? What type of force exists between A and B ?

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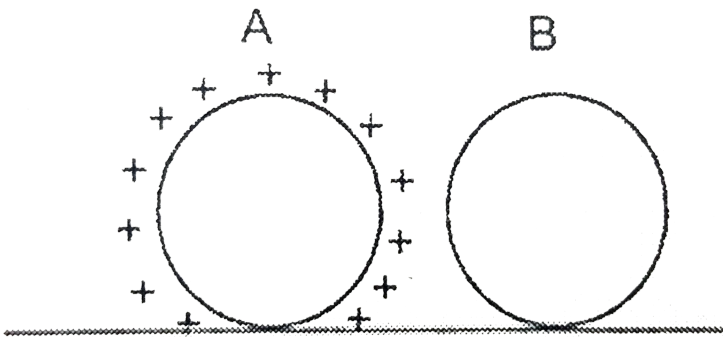
39. Raghavan found a metallic rod AB and a glass rod CD both positively charged and placed on an insulating table. He wanted to know what

would happen to the charges on AB and CD if he touched both the rod at A and C ? Discuss.



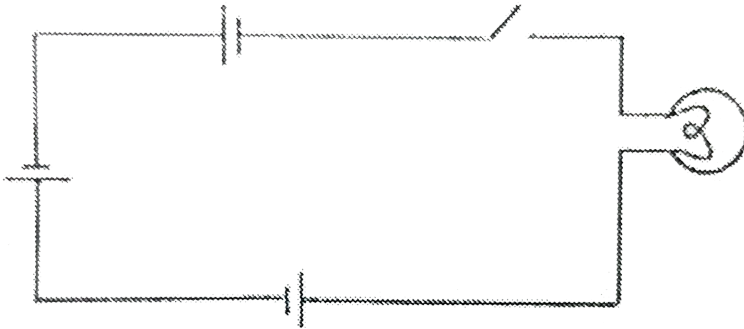
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40. Two identical, small metallic spheres A and B are placed side by side on an insulating smooth table as shown in the figure. If A is positively charged and held fixed with the table, discuss the motion of B.



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41. Observe the circuit and state whether the cells are connected in series or parallel. If each cell is of e.m.f. $1.5V$, then find the total e.m.f applied across the bulb connected.

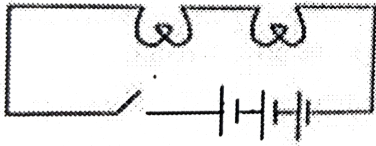


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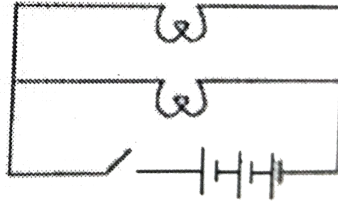
42. Three identical cells of e.m.f. $1.5V$ are given. Find how we can arrange them to get a total e.m.f. of
(a) $1.5V$, (b) $3V$, (c) $4.5V$.

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43. Prahar took two identical heating elements and connected them to a battery in two different ways as shown in the figure. When he switched ON the switch, is the heat developed in each element the same or different in both the cases ?



(a)

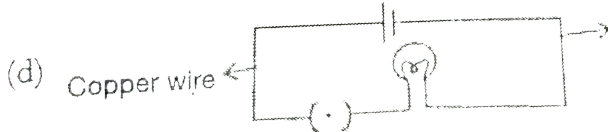
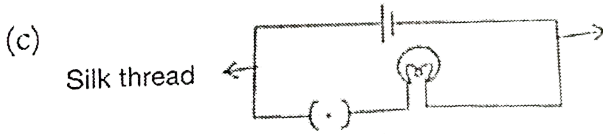
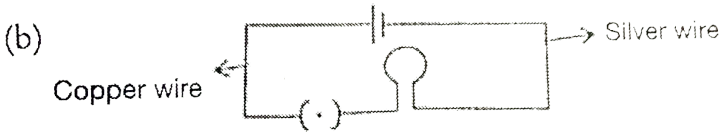
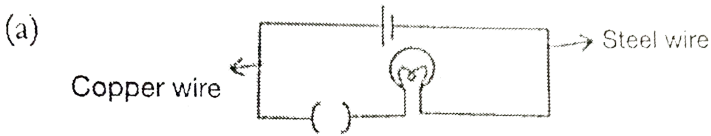


(b)



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44. Identify whether the following circuits are open or closed.



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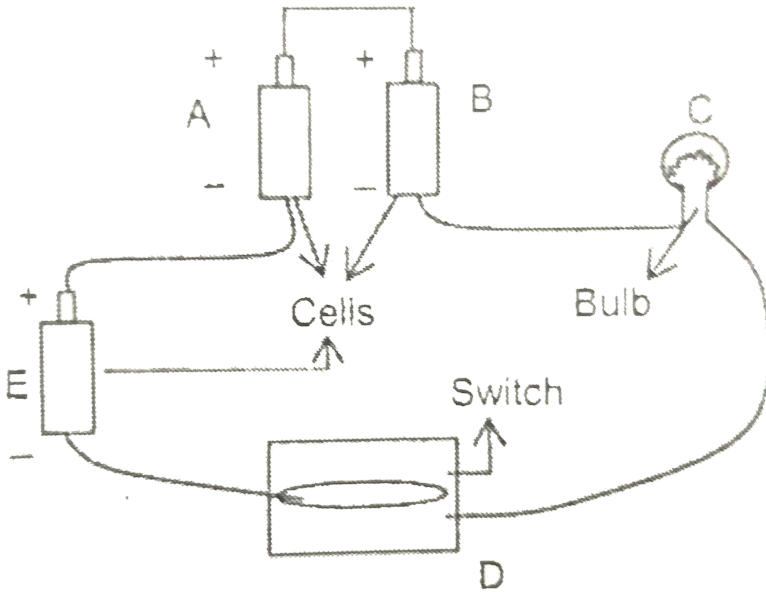
45. What is the nature of materials used to make the 'filament' of an electric bulb and the 'fuse wire' used in electric fuse? Compare them.

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46. What are the colours of live, neutral and earth wires?

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47. Represent the connections shown below by a circuit diagram.

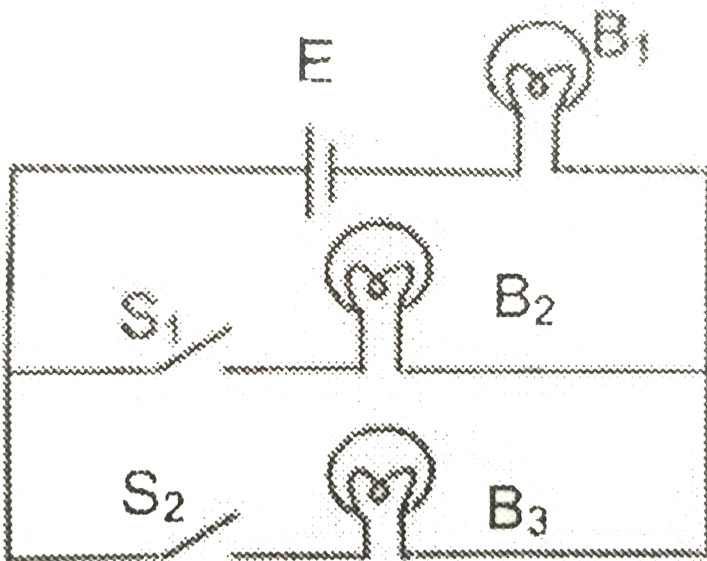


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48. We observe the bulb glowing when the switch is 'ON'. Can we conclude that charges instantly move from the 'switch' to the bulb? Discuss.

49. What is a depolarizer and how does it work ?

50. Gourang made an electric circuit with three bulbs B_1 , B_2 and B_3 a cell and two switches S_1 and S_2 as shown in figure. He notes his observation when



(a) S_1 is closed and S_2 is open,

(b) S_2 is closed and S_1 is open.

He also found that a bulb whose failure made the circuit 'open' irrespective of the status of S_1 and S_2 . What are his observations?



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51. Saket was repairing an electric bell. By mistake, instead of an electromagnet, he placed a permanent magnet in the electric bell. Explain, what changes do you observe.

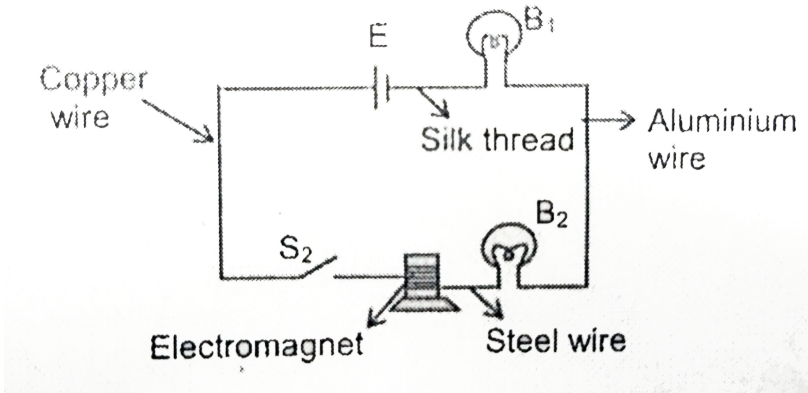


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52. Ravinder was inspired by reading the autobiography of Thomas Alva Edison and changed a portion of his room into a laboratory. In his laboratory he performed an activity that demonstrates both 'heating effect' and 'magnetic effect' of electric current. He connected different components with different wires and the connections are represented by the following circuit diagram.

To his disappointment, he was not successful in his effort. Observe the

circuit and suggest modifications to make his effort successful.

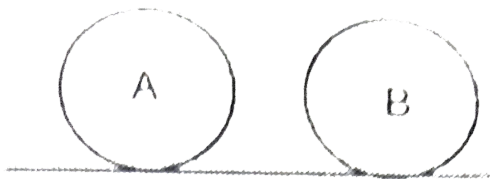


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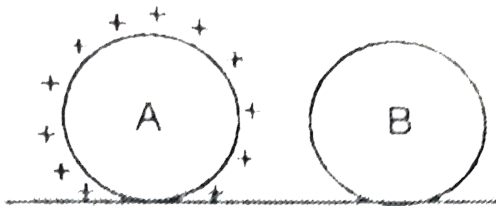
Level Iii

1. Describe the electrostatic force that exists between A and B in the following cases.

(a)



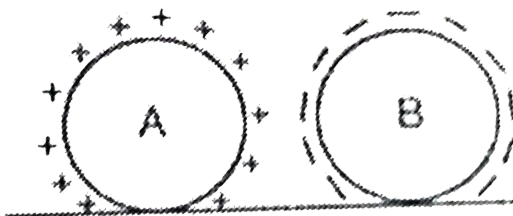
(b)



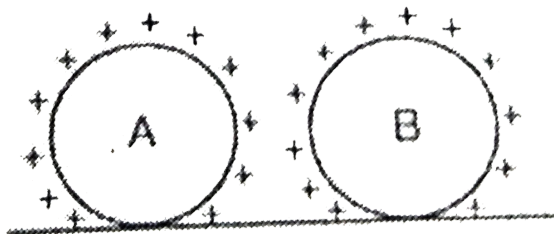
(c)



(d)



(e)



(f)





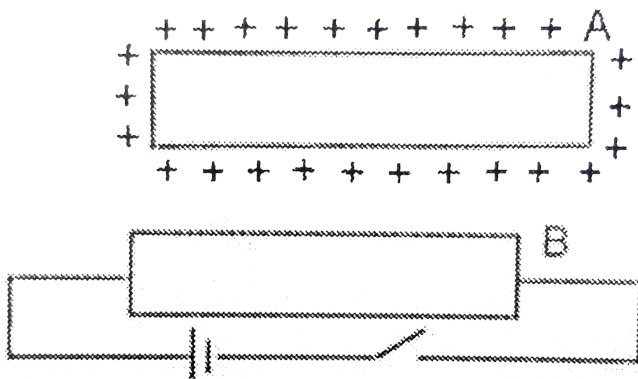
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2. We know that (a) like electrical charges repel each other and (b) substances which allow charges to move through them are called conductors. In the light of these facts, find where the charge placed on a conductor resides.



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3. A and B are two identical conducting rods. A is given positive charge and B is connected to a cell as shown in the figure. Will there be any change in the electrostatic force between A and B if the switch is closed ?





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4. How can we identify the presence and nature of charge on a body with the help of an electroscope ?

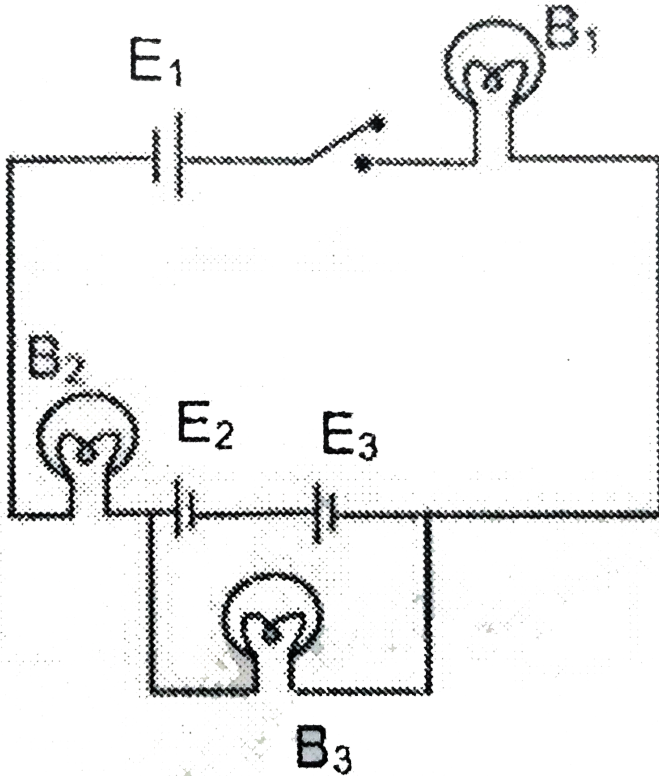


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5. Three identical cells E_1, E_2, E_3 and three identical bulbs B_1, B_2, B_3 are connected as shown in the circuit.

(a) Find how E_1, E_2, E_3 and B_1, B_2, B_3 are connected, whether in parallel or in series ?

(b) Compare the brightness of the bulbs.



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6. Usually we use two different types of sockets (a) two-pin socket and (b) three-pin socket. What purpose does the third pin in a three-pin socket serve?

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7. Pranith received an electric bill for the month of April. He started verifying it by calculating the electrical energy consumed by a 2000 W electrical appliance that is used for two hours every day in his workshop. In his house he used bulbs of 100 W for 4 hours every day in the month of April, which consumes the same electrical energy as that of the electrical appliance in the workshop. Find the number of bulbs Pranith uses in his house.

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8. Which effect of electricity is used in electrotype setting? Discuss.

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9. State whether all the bulbs we use work on the principle of heating effects of electric current?

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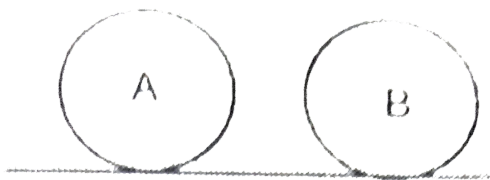
10. What make electrical energy so useful for mankind ?



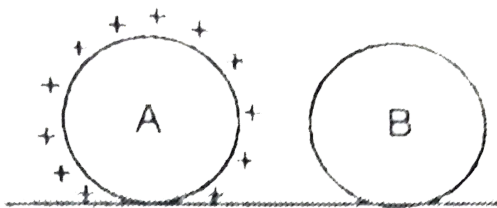
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11. Describe the electrostatic force that exists between A and B in the following cases.

(a)



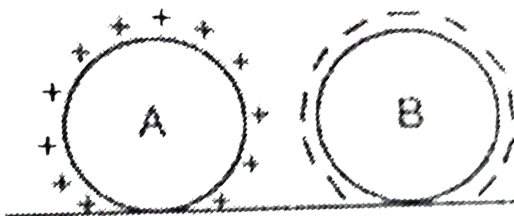
(b)



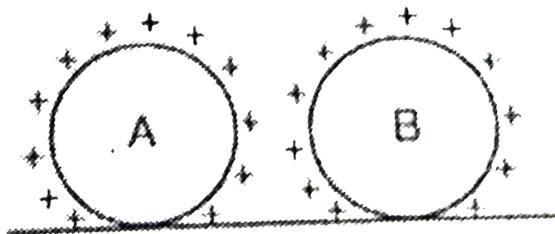
(c)



(d)



(e)



(f)





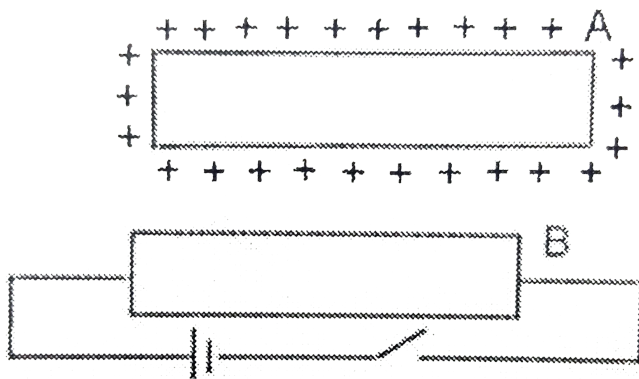
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12. We know that (a) like electrical charges repel each other and (b) substances which allow charges to move through them are called conductors. In the light of these facts, find where the charge placed on a conductor resides.



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13. A and B are two identical conducting rods. A is given positive charge and B is connected to a cell as shown in the figure. Will there be any change in the electrostatic force between A and B if the switch is closed ?





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14. With the help of an electroscope, how can we identify the presence and nature of charge on a body?

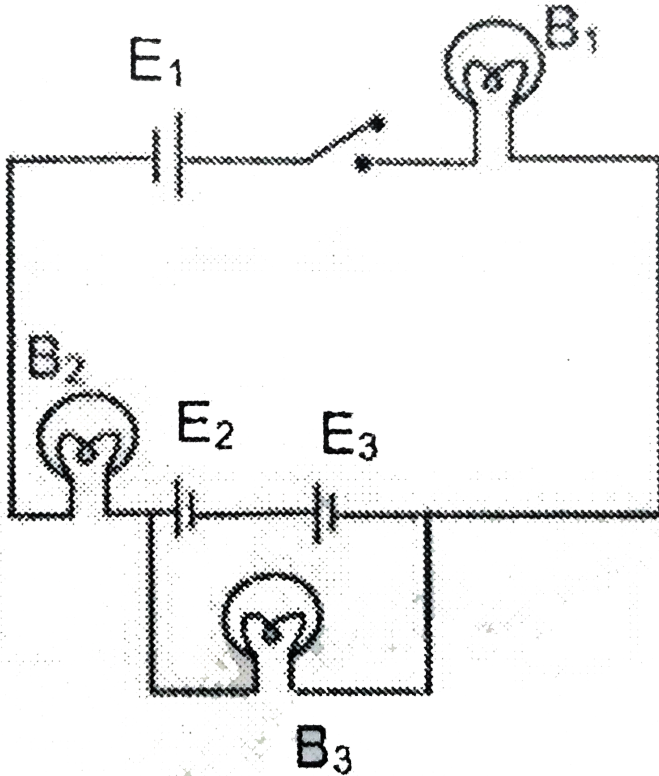


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15. Three identical cells E_1, E_2, E_3 and three identical bulbs B_1, B_2, B_3 are connected as shown in the circuit.

(a) Find how E_1, E_2, E_3 and B_1, B_2, B_3 are connected, whether in parallel or in series ?

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16. Usually we use two different types of sockets (a) two-pin socket and (b) three-pin socket. What purpose does the third pin in a three-pin socket serve?

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18. Which effect of electricity is used in electrotype setting? Discuss.

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19. Do all bulbs we use work on the principle of heating effects of electric current? Discuss.

 [Watch Video Solution](#)

20. What make electrical energy so useful for mankind ?



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Test 2

1. Write the following steps in sequence that explain the phenomenon of redistribution of charges in an uncharged body in presence of a charged body .

(A) As a result at one of the neutral body there is an excess of negatively charged particles and the other end there is an excess of positively charged particles.

(B) Place a positively charged body near a neutral body.

(C) The negatively and positively charged particles in the neutral body get attracted and repelled by the positively charged body .

A. BCA

B. CAB

C. ACB

D. BAC

Answer: A



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2. Write the following steps in sequence to show that unlike charges attract each other.

(A) Take an ebonite rod and a glass rod and tie two silk threads so that they can be suspended.

(B) The glass rod and ebonite rod when brought near attract each other showing that charges attract each other.

Rub ebonite rod with woollen cloth and glass rod with silk cloth and suspend them in air by holding silk threads.

A. ACB

B. CBA

C. BCA

D. ABC

Answer: A



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3. Identify the correct statement/s related to polarization in voltaic cell.

(a) When current passes through the voltaic cell, zinc plate starts dissolving in the acid and produces hydrogen bubbles.

(b) These hydrogen bubbles accumulate on the copper plate and develop resistance to the flow of current.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and (B) true.

D. Both (A) and (B) are false.

Answer: C



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4. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero
- C. it consists of equal positive and negative charge.
- D. Both (b) and (c)

Answer: D



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5. Assertion (A) : The electrical appliances connected in series do not work to their full capacity.

Reason (R) : The electrical energy drawn from the battery is shared by all the appliances connected in series.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A

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6. Assertion (A): A 1000 W bulb when used for 1 hour consumes the same number of electrical units as that of 100 W bulb that is used for 10 hours.
Reason (R) : On electrical unit is charged when one kilowatt hour electrical energy is consumed.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



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7.

Match

columns

Column A		Column B
(A) Nature of the charge	()	(a) Acts as negative and positive plates
(B) Lightning	()	(b) Live wire and neutral wire are connected
(C) Cells connected in series	()	(c) Involves charged particles
(D) Zinc and carbon rods in Leclanché cell	()	(d) Their total emf is sum of e.m.f of all the cells used
(E) kWh meter	()	(e) Deflections in the metallic strips

A. $A \rightarrow d, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow b$

B. $A \rightarrow b, B \rightarrow c, C \rightarrow d, D \rightarrow e, E \rightarrow a$

C. $A \rightarrow e, B \rightarrow c, C \rightarrow d, D \rightarrow a, E \rightarrow b$

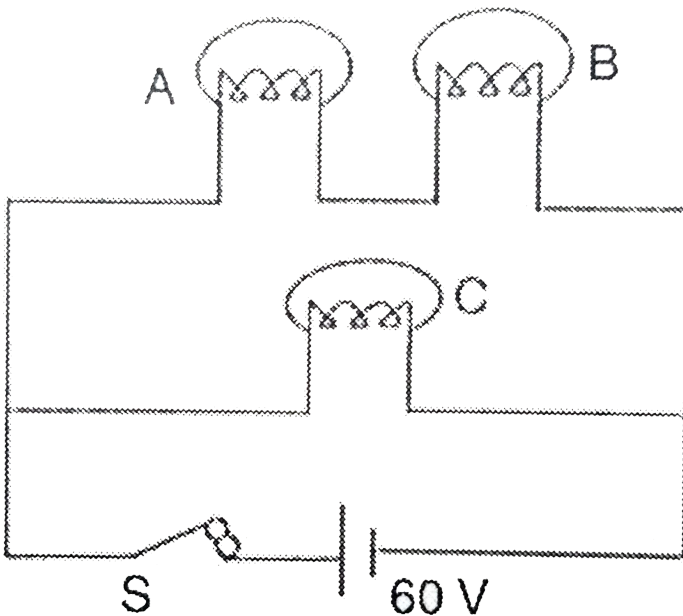
D. $A \rightarrow b, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow d$

Answer: C

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8. Choose the correct statement about the given circuit :

Three identical bulb are connected as shown in the figure.



A. Bulbs A and B are in parallel with bulb C.

B. The potential (e.m.f) in the circuit is 60 V.

C. When switch 'S' is turned on all bulbs glow with the same brightness.

D. Both (a) and (b).

Answer: D



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9. Choose the correct statement : -

(A) In case of an electric cell, chemical energy is converted into electrical energy.

(B) combination of electric cells is called battery.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and (B) true.

D. Both (A) and (B) are false.

Answer: C



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10. The brass of cap of the carbon and the zinc can of the dry cell act as _____ and _____ poles, respectively.

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

Answer: A



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11. Which of the following is a good conductor of electricity.

A. impure water

B. Glass

C. ebonite

D. Wood

Answer: A



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12. An electric generator converts :

A. mechanical energy into electrical energy.

B. electrical energy into mechanical energy.

C. chemical energy into electrical energy.

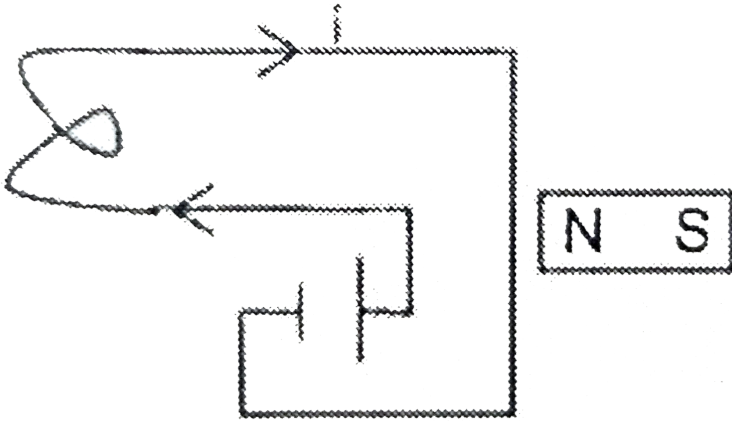
D. chemical energy into mechanical energy.

Answer: A



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- B. it will be attracted by the conductor
- C. it will not show any effect.
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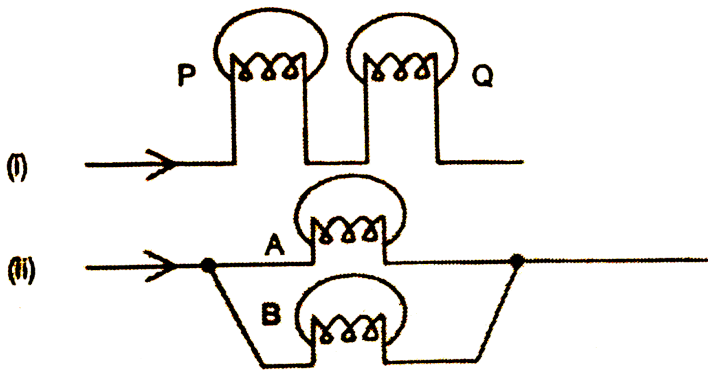
Answer: D

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14. Choose the correct statement:

When the same current(i) flows through two circuits as shown in the figures, then (assume that all bulbs are identical)

- (A) bulbs in first combination glow with more brightness.
- (B) bulbs in second combination glow with more brightness.
- (C) bulbs in both the combination glow with equal brightness.



- A. Only (A) is true.
- B. Only (B) is true.
- C. Only (C) is true
- D. Cannot be determined

Answer: A



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(C) The negatively and positively charged particles in the neutral body get attracted and repelled by the positively charged body .

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C. ACB

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(A) Take an ebonite rod and a glass rod and tie two silk threads so that they can be suspended.

(B) The glass rod and ebonite rod when brought near attract each other showing that charges attract each other.

Rub ebonite rod with woollen cloth and glass rod with silk cloth and suspend them in air by holding silk threads.

A. ACB

B. CBA

C. BCA

D. ABC

Answer: A



Watch Video Solution

18. Identify the correct statement/s related to polarization in voltaic cell.

(a) When current passes through the voltaic cell, zinc plate starts dissolving in the acid and produces hydrogen bubbles.

(b) These hydrogen bubbles accumulate on the cop-per plate and develop resistance to the flow of current.

- A. Only (A) is true.
- B. Only (B) is true.
- C. Both (A) and (B) true.
- D. Both (A) and (B) are false.

Answer: C



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19. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero
- C. it consists of equal positive and negative charge.

D. Both (b) and (c)

Answer: D



[Watch Video Solution](#)

20. Assertion (A) : The electrical appliances connected in series do not work to their full capacity.

Reason (R) : The electrical energy drawn from the battery is shared by all the appliances connected in series.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



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21. Assertion (A): A 1000 W bulb when used for 1 hour consumes the same number of electrical units as that of 100 W bulb that is used for 10 hours.

Reason (R) : One electrical unit is charged when one kilowatt hour electrical energy is consumed.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



Watch Video Solution

Column A		Column B	
(A) Nature of the charge	()	(a) Acts as negative and positive plates	
(B) Lightening	()	(b) Live wire and neutral wire are connected	
(C) Cells connected in series	()	(c) Involves charged particles	
(D) Zinc and carbon rods in Leclanché cell	()	(d) Their total emf is sum of e.m.f of all the cells used	
(E) kWh meter	()	(e) Deflections in the metallic strips	

A. $A \rightarrow d, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow b$

B. $A \rightarrow b, B \rightarrow c, C \rightarrow d, D \rightarrow e, E \rightarrow a$

C. $A \rightarrow e, B \rightarrow c, C \rightarrow d, D \rightarrow a, E \rightarrow b$

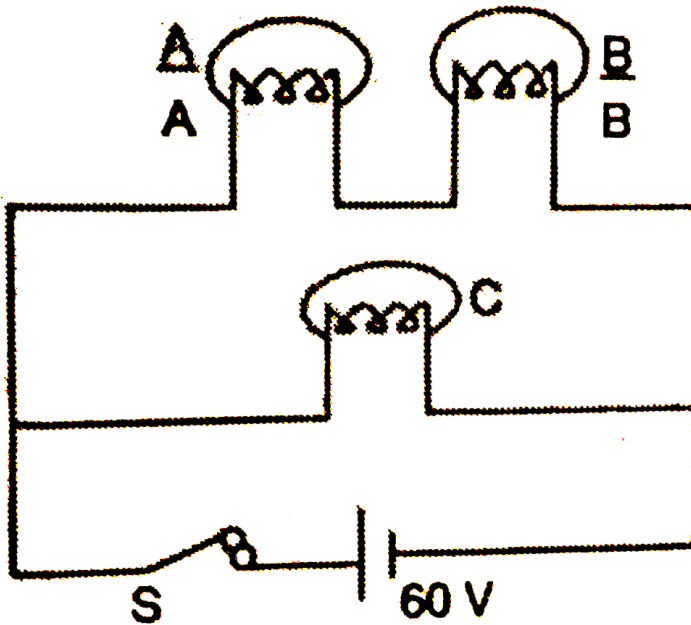
D. $A \rightarrow b, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow d$

Answer: C



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23. Choose the correct statement about the given circuit: Three identical bulbs are connected as shown in the figure.



- A. Bulbs A and B are in parallel with bulb C.
- B. The potential (e.m.f) in the circuit is 60 V.
- C. When switch 'S' is turned on all bulbs glow with the same brightness.
- D. Both (a) and (b).

Answer: D



[Watch Video Solution](#)

24. Choose the correct statement : -

(A) In case of an electric cell, chemical energy is converted into electrical energy.

(B) combination of electric cells is called battery.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and (B) true.

D. Both (A) and (B) are false.

Answer: C



[Watch Video Solution](#)

25. The brass of cap of the carbon and the zinc can of the dry cell act as _____ and _____ poles, respectively.

A. positive, negative

B. positive, positive

C. negative, positive

D. negative, negative

Answer: A



Watch Video Solution

26. Which of the following is a good conductor of electricity.

A. impure water

B. Glass

C. ebonite

D. Wood

Answer: A



Watch Video Solution

27. An electric generator converts :

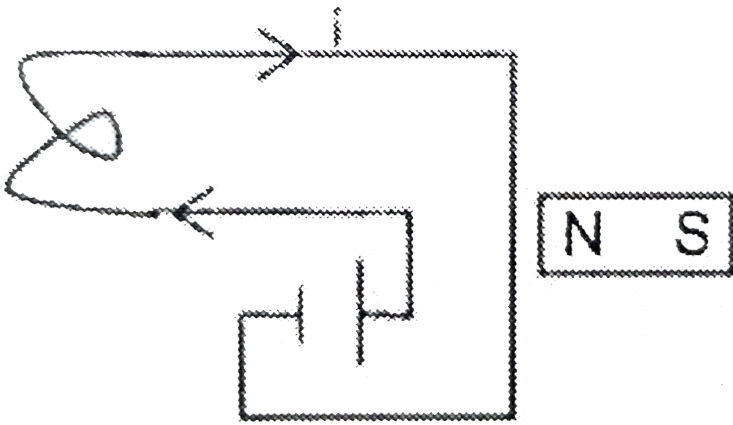
- A. mechanical energy into electrical energy.
- B. electrical energy into mechanical energy.
- C. chemical energy into electrical energy.
- D. chemical energy into mechanical energy.

Answer: A



[Watch Video Solution](#)

28. A magnet is brought close to a current carrying con-ductor as shown in figure, then



- A. it will be repelled by the conductor.
- B. it will be attracted by the conductor
- C. it will not show any effect.
- D. it will be just deflected.



Answer: D

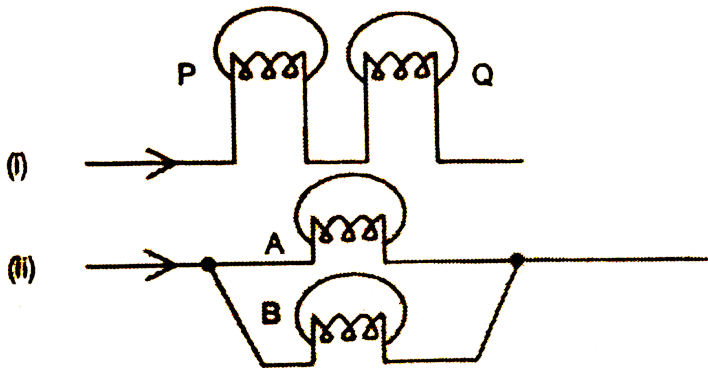


Watch Video Solution

29. Choose the correct statement:

When the same current(i) flows through two circuits as shown in the figures, then (assume that all bulbs are identical)

- (A) bulbs in first combination glow with more brightness.
- (B) bulbs in second combination glow with more brightness.
- (C) bulbs in both the combination glow with equal brightness.



- A. Only (A) is true.
- B. Only (B) is true.
- C. Only (C) is true
- D. Cannot be determined

Answer: A



[Watch Video Solution](#)

30. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero
- C. it consists of equal positive and negative charge.
- D. Both (b) and (c)

Answer: D



[Watch Video Solution](#)

Assessment Test 1

1. What is the correct sequence of given steps to charge a body by conduction?

(A) Bring this positively charged glass rod in contact with a (neutral) uncharged metallic body, because of this the metallic body also becomes positively charged.

(B) Take a glass rod and rub it with silk cloth.

(C) Some electrons move from the glass rod to the silk cloth because of this the glass and becomes positively charged.

A. ABC

B. BCA

C. ACB

D. BAC

Answer: B



Watch Video Solution

2. Write the following steps in sequential order to prove that like charges repel each other.

(A) Take two glass rods.

(B) Now bring these two charged rods nearer.

(C) Charge them by rubbing each glass rod with a silk cloth.

(D) The glass rods equal other showing that like charges repel each other.

A. ABCD

B. DCBA

C. BACD

D. BADC

Answer: C



Watch Video Solution

3. Identify the correct statement/s related to local action in a voltaic cell.

(a) Carbon and iron particles present in zinc plate act as impurities.

(b) Impurities react with acid and with the zinc particles to form a large number of tiny cells creating local electric circuits.

A. Only (A) is true.

- B. Only (B) is true.
- C. Both (A) and (B) true.
- D. Both (A) and (B) false.

Answer: C



[Watch Video Solution](#)

4. A glass rod is rubbed against a silk cloth, then

- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charge due to gain of electrons.
- C. if these two bodies are again brought in contact the net charge on them is zero.
- D. All the above.

Answer: D



[Watch Video Solution](#)

5. Assertion (A): A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

Reason (R): 1 unit of electrical energy = 1000 k Wh .

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: C



[Watch Video Solution](#)

6. Assertion (A) : All the bulbs connected in parallel glow brightly.

Reason (R) : All the bulbs are connected directly to a battery and derive the required electrical energy.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true and R is not the correct explanation of A.

C. A is true but R is false.

D. Both A and R are false.

Answer: A

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7.

Match

columns

Column A	Column B
(A) Cell	() (a) Nature of the charge
(B) Discharge phenomenon	() (b) Earth connector
(C) Gold leaf electroscope	() (c) Spark and crackling sound
(D) E.M.F. of dry cell	() (d) Converts chemical energy into electrical energy

A. $A \rightarrow d, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow b$

B. $A \rightarrow b, B \rightarrow c, C \rightarrow d, D \rightarrow e, E \rightarrow a$

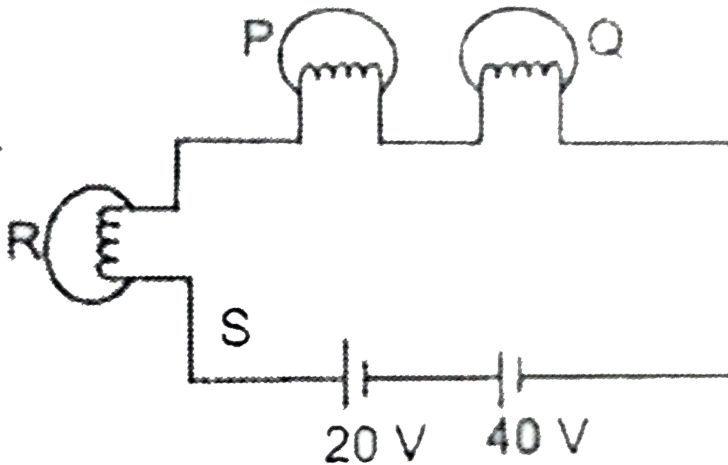
C. $A \rightarrow e, B \rightarrow c, C \rightarrow d, D \rightarrow a, E \rightarrow b$

D. $A \rightarrow b, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow d$

Answer: A

 [Watch Video Solution](#)

8. Three identical bulbs are connected as shown in figure. Choose the correct statement.



A. All bulbs are in a series combination.

- B. If bulb R is removed, bulb P and Q will still glow.
- C. The total e.m.f in the circuit is 40 V.
- D. The given circuit is an open circuit.

Answer: A

 [Watch Video Solution](#)

9. Choose the correct statement(s) in case of a voltaic cell.

(A) Cathode used is Zn and anode used is copper.

(B) The electrolyte used is dilute sulphuric acid.

- A. Only (A) is true.
- B. Only (B) is true.
- C. Both (A) and (B) true.
- D. Both (A) and (B) are false.

Answer: C



[Watch Video Solution](#)

10. The porous pot in Leclanche cell contains _____ with a carbon rod dipped in it.



[Watch Video Solution](#)

11. Which of the following is a bad conductor of electricity ?

A. Gold

B. Copper

C. Pure alcohol

D. Living plant

Answer: C



[Watch Video Solution](#)

12. An electric motor converts

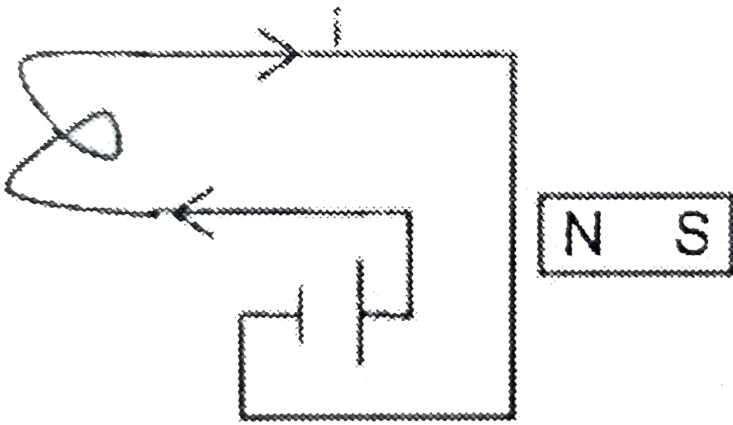
- A. electrical energy into mechanical energy.
- B. mechanical energy into electrical energy.
- C. heat energy into electrical energy.
- D. None of the above

Answer: A



[Watch Video Solution](#)

13. A magnet is brought close to a current carrying conductor as shown in figure, then



- A. iron filings will fly away from the comb, when switch is turned off.
- B. iron filing will fly away from the comb, when switch is turned off.
- C. iron filings align in the direction of the magnetic field produced around the metallic comb.
- D. iron filing will be attracted by the comb.

Answer: B

 [Watch Video Solution](#)

14. Assertion (A): A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

Reason (R): 1 unit of electrical energy = 1000 k Wh .

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



[Watch Video Solution](#)

15. A glass rod is rubbed against a silk cloth, then

- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charge due to gain of electrons.

C. if these two bodies are again brought in contact the net charge on them is zero.

D. All the above.

Answer: D



[Watch Video Solution](#)

16. What is the correct sequence of given steps to charge a body by conduction?

(A) Bring this positively charged glass rod in contact with a (neutral) uncharged metallic body, because of this the metallic body also becomes positively charged.

(B) Take a glass rod and rub it with silk cloth.

(C) Some electrons move from the glass rod to the silk cloth because of this the glass and becomes positively charged.

A. ABC

B. BCA

C. ACB

D. BAC

Answer: B



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17. Write the following steps in sequential order to prove that like charges repel each other.

(A) Take two glass rods.

(B) Now bring these two charged rods nearer.

(C) Charge them by rubbing each glass rod with a silk cloth.

(D) The glass rods equal other showing that like charges repel each other.

A. ABCD

B. DCBA

C. BACD

D. BADC

Answer: C



[Watch Video Solution](#)

18. Identify the correct statement/s related to local action in a voltaic cell.

(a) Carbon and iron particles present in zinc plate act as impurities.

(b) Impurities react with acid and with the zinc particles to form a large number of tiny cells creating local electric circuits.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and (B) true.

D. Both (A) and (B) false.

Answer: C



[Watch Video Solution](#)

19. When a glass rod is rubbed with silk, it

- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charge due to gain of electrons.
- C. if these two bodies are again brought in contact the net charge on them is zero.
- D. All the above.

Answer: D



[Watch Video Solution](#)

20. Assertion (A): A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

Reason (R): 1 unit of electrical energy = 1000 k Wh .

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.

C. A is true but R is false.

D. Both A and R are false.

Answer: C

 [Watch Video Solution](#)

21. Assertion (A) : All the bulbs connected in parallel glow brightly.

Reason (R) : All the bulbs are connected directly to a battery and derive the required electrical energy.

A. Both A and R are true and R is the correct explanation of A.

B. Both A and R are true and R is not the correct explanation of A.

C. A is true but R is false.

D. Both A and R are false.

Answer: A

 [Watch Video Solution](#)

Column A	Column B
----------	----------

(A) Cell	() (a) Nature of the charge
(B) Discharge phenomenon	() (b) Earth connector
(C) Gold leaf electroscope	() (c) Spark and crackling sound
(D) E.M.F. of dry cell	() (d) Converts chemical energy into electrical energy

22.

A. $A \rightarrow d, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow b$

B. $A \rightarrow b, B \rightarrow c, C \rightarrow d, D \rightarrow e, E \rightarrow a$

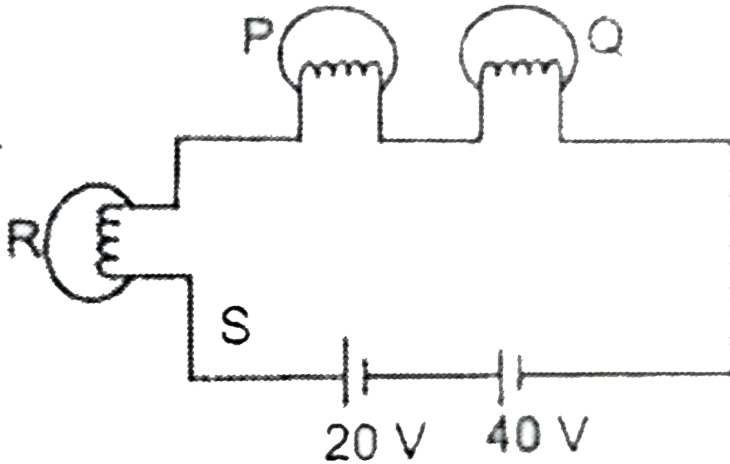
C. $A \rightarrow e, B \rightarrow c, C \rightarrow d, D \rightarrow a, E \rightarrow b$

D. $A \rightarrow b, B \rightarrow c, C \rightarrow a, D \rightarrow e, E \rightarrow d$

Answer: A

 [View Text Solution](#)

23. Three identical bulbs are connected as shown in figure. Choose the correct statement.



- A. All bulbs are in a series combination.
- B. If bulb R is removed, bulb P and Q will still glow.
- C. The total e.m.f in the circuit is 40 V.
- D. The given circuit is an open circuit.

Answer: A

[▶ Watch Video Solution](#)

24. Choose the correct statement(s) in case of a voltaic cell.

(A) Cathode used is Zn and anode used is copper.

(B) The electrolyte used is dilute sulphuric acid.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and (B) true.

D. Both (A) and (B) are false.

Answer: C

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25. The porous pot in Leclanche cell contains _____ with a carbon rod dipped in it.

 [Watch Video Solution](#)

26. Which of the following is a bad conductor of electricity ?

- A. Gold
- B. Copper
- C. Pure alcohol
- D. Living plant

Answer: C



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27. An electric motor converts

- A. electrical energy into mechanical energy.
- B. mechanical energy into electrical energy.
- C. heat energy into electrical energy.
- D. None of the above

Answer: A



[Watch Video Solution](#)

28. What happens when a current carrying metallic comb is placed close to small iron filings?

- A. iron filings will fly away from the comb, when switch is turned off.
- B. iron filing will fly away from the comb, when switch is turned off.
- C. iron filings align in the direction of the magnetic field produced around the metallic comb.
- D. iron filing will be attracted by the comb.

Answer: B



[Watch Video Solution](#)

29. Assertion (A): A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

Reason (R): 1 unit of electrical energy = 1000 k Wh .

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true and R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



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30. A glass rod is rubbed against a silk cloth, then

- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charge due to gain of electrons.

C. if these two bodies are again brought in contact the net charge on them is zero.

D. All the above.

Answer: D

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Test Your Concepts Very Short Answer Type Questions

1. Which is the most convenient form of energy?

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2. When two bodies A and B are rubbed, they acquire charge by friction, If the charge on A is negative, then the charge on B is _____.

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3. _____ is a device used to detect the presence and the nature of the charge on a body.

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4. _____ is a used to protect building from lightning.

 [Watch Video Solution](#)

5. When charges are moving from one end to the other end of a conductor, we say there is _____ in the conductor.

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6. _____ acts as a positive pole and _____ as a negative pole in a dry cell.

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7. _____ and _____ are two defects of voltaic cell.



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8. Four cells of e.m.f. 2.5 V each are connected in series to form a battery, the e.m.f. of the battery is _____.



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9. _____ or _____ is used to protect electrical appliances from damages due to excess current.



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10. When electric current passes through a wire, _____ field is created around it.



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[Watch Video Solution](#)

11. A glass rod P is observed to be attracting an ebonite rod Q , then
- A. P and Q are uncharged bodies
 - B. both P and Q are charged with identical charge.
 - C. both P and Q are charged oppositely.
 - D. either P is charged, or Q is charged. If both are charged, they are opposite in nature.

Answer: D



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12. An uncharged body X is brought into contact with a negatively charged body Y, then
- A. X gains negative charge.

B. Y loses negative charge.

C. negative charge gained by X is equal to the negative charge lost by

Y.

D. All of the above

Answer: D

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13. Which of the following is not a source of electrical energy ?

A. A cell

B. A battery

C. An electric motor

D. A generator

Answer: C

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14. Which of the following is a false statement about Leclanche cell ?

- A. Electrolyte is a liquid.
- B. Zinc rod and carbon rod acts as negative and positive electrodes.
- C. It can be easily portable from place to place.
- D. Dry cell is a modified form of Leclanche cell.

Answer: C



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15. Which of the following is not a depolarizer ?

- A. Potassium dichromate
- B. Copper sulphate
- C. Mercury oxide

D. Manganese dioxide

Answer: C



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16. Which of the following is not an electrical appliance ?

A. Washing machine

B. TV

C. Fire extinguisher

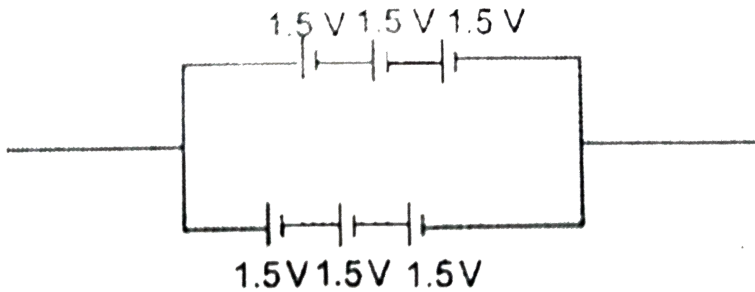
D. Water cooler

Answer: C



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17. Six identical cells are connected as shown in the circuit. The total e.m.f is _____



A. $1.5V$

B. $4.5V$

C. $9V$

D. $0V$

Answer: B

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18. Which of the following statements is false about using household electrical appliances ?

- A. Appliances with ISI mark is to be used.
- B. Switches may be used with wet hands.
- C. Fingers or metallic wires should not be kept in sockets.
- D. To know the presence of current, tester is to be used.

Answer: B

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19. Which of the following devices does not work on the principle of magnetic effects of electric current?

- A. Electromagnet
- B. Electric motor
- C. Electric generator
- D. Telegraph

Answer: C

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20. In which of the following the principle of 'chemical effect of electricity' is not used ?

- A. Telephone
- B. Purification of metals
- C. Electroplating
- D. Electro typing

Answer: A

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21. Which of the following electrical appliances works on the principle of the magnetic effect of electric current ?

- A. electric heater

B. electric motor

C. electric bell

D. Both (b) and (c)

Answer: D



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22. Choose the correct statement : -

(A) In case of an electric cell, chemical energy is converted into electrical energy.

(B) combination of electric cells is called battery.

A. only A is true

B. only B is true

C. Both A and B are true

D. Both A and B are false

Answer: C



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23. A negatively charged body is connected to the ground, then choose the correct statement.

(A) It becomes positively charged.

(B) Electrons flow from the body to the ground.

A. Only A is true

B. Only B is true

C. Both A and B are true

D. Both A and B are false

Answer: A



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24. A current carrying conductor produces _____

- A. only heat
- B. only magnetic field
- C. Both heat and magnetic field
- D. None of the above

Answer: C



Watch Video Solution

25. An electric motor converts

- A. electrical energy into mechanical energy.
- B. mechanical energy into electrical energy.
- C. heat energy into electrical energy.
- D. None of the above

Answer: A



Watch Video Solution

26. Which of the following is a bad conductor of electricity ?

A. gold

B. copper

C. alcohol

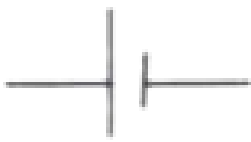
D. living plant

Answer: C



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27. Which of the following is the symbol of a battery ?



A.



B.



C.



D.

Answer: B



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28. Unit of electromotive force is

A. volt

B. second

C. metre

D. ms^{-1}

Answer: A



Watch Video Solution

29. The device that can be used to detect the presence of current in a circuit is _____

A. magnetic compass

B. cell

C. an inverter

D. voltmeter

Answer: A



Watch Video Solution

30. Write the following steps in sequential order to explain the working of an electric bell.

- (A) When current passes through the coil, it behaves like a magnet and attracts (pulls) the iron strip.
- (B) No more does not coil behave as an electromagnet and the attraction between the coil and the iron strip is lost. Because of this the iron strip gets back to its original position and touches the screw.
- (C) The hammers connected to iron strip also moves and strikes the gong because of which, sound is produced.
- (D) When the iron strip is pulled towards the coil, it loses contact with the screw and the circuit becomes open circuit.
- (E). Once again the circuit is closed , and the above process is repeated.

A. ABCDE

B. EDCBA

C. BADEC

D. ACDBE

Answer: D



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31. Write the following steps in sequential order to prove that like charges repel each other.

(A) Take two glass rods.

(B) Now bring these two charged rods nearer.

(C) Charge them by rubbing each glass rod with a silk cloth.

(D) The glass rods repel each other showing that like charges repel each other.

A. ABCD

B. ACBD



C. DCBA

D. BDAC

Answer: B



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Column A		Column B	
A. A cell	()	a.	
B. An open tap key	()	b.	Lightning rod
C. Electric power	()	c.	
D. Benjamin Franklin	()	d.	Magnetic effect of electric current
E. Electric bell	()	e.	Eel fish


32.



[View Text Solution](#)

Column A

Column B

- | | | |
|--------------------------------|-----|--|
| A. Button cells | () | a. Purifying metals |
| B. Electrolysis | () | b. Operating calculators and wrist watches |
| C. Depolarizers | () | c.  |
| D. Electric fuse | () | d. Convert hydrogen into water |
| E. Tap key in closed condition | () | e. Heating effect of electric current |
| F. Porous pot | | f. Powdered carbon and manganese dioxide |

33.



[View Text Solution](#)

34. How many types of charges are there and what are they ?



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35. What is an electron ?



[Watch Video Solution](#)

36. What is an electroscope?



[Watch Video Solution](#)

37. When do we say that there is an electric current in a conductor ?



[Watch Video Solution](#)

38. What is an electric circuit ?



[Watch Video Solution](#)

39. What is a switch ?



[Watch Video Solution](#)

40. Name two different ways of connecting components in an electric circuit.

 [Watch Video Solution](#)

41. How many types of sockets are in use and what are they ?

 [Watch Video Solution](#)

42. What is a miniature circuit breaker ? Where is it used ?

 [Watch Video Solution](#)

43. What is the e.m.f of the Bichromate cell ?

 [Watch Video Solution](#)

44. How can we describe the force between two charged bodies ?

 [Watch Video Solution](#)

45. Which charged particle is free to move within the body as well as from one body to another body ?

 [Watch Video Solution](#)

46. Distinguish between conductors and insulators.

 [Watch Video Solution](#)

47. What any two sources of electrical energy.

 [Watch Video Solution](#)

48. What is a battery ?



Watch Video Solution

49. What is an electric generator .



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50. What is 'one unit' or 'one kilowatthour' of electrical energy ?



Watch Video Solution

51. What is a fuse ?



Watch Video Solution

52. What happens when current passes through an electrolyte ?



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53. Why are thick wires not used in fuses ?



[Watch Video Solution](#)

Test Your Concepts Short Answer Type Questions

1. Describe how we can charge a body by friction.



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2. Write a short note on lightning conductor.



[Watch Video Solution](#)

3. What are the precautions to be taken in using house-hold electrical appliances?

 [Watch Video Solution](#)

4. How can we charge a body by conduction ?

 [Watch Video Solution](#)

5. Distiguish between open and closed circuites.

 [Watch Video Solution](#)

6. Describe dry cell.

 [Watch Video Solution](#)

7. Write a short note on (a) short circuit and (b) overload.



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8. Write a short note on
overload



[Watch Video Solution](#)

9. Write the uses of electromagnets.



[Watch Video Solution](#)

10. Describe 'electroscope' and explain briefly how it works.



[Watch Video Solution](#)

11. Three cells of 1.5V, 2.5V and 3.5 V, respectively, are connected in series to form a battery. Find the e.m.f of the battery.

 [Watch Video Solution](#)

12. Describe a dynamo.

 [Watch Video Solution](#)

13. What is an electromagnet ? How the strength of the electromagnet can be increased ?

 [Watch Video Solution](#)

14. Write the major defects in Voltaic cell.

 [Watch Video Solution](#)

1. Write a note on 'electrical induction'.

 [Watch Video Solution](#)

2. Describe Voltaic cell and write the major defects of it.

 [Watch Video Solution](#)

3. Describe with an example 'heating effects of electric current'.

 [Watch Video Solution](#)

4. Write a short note on electric bell.

 [Watch Video Solution](#)

5. What are the advantages and disadvantage of con-necting bulbs in parallel and in series ?

 [Watch Video Solution](#)

6. What is magnetic effect of electric current.

 [Watch Video Solution](#)

7. Describe chemical effects of electric current with an example.

 [Watch Video Solution](#)

8. Explain about Bichromate cell with a neat labelled diagram.

 [Watch Video Solution](#)

1. A neutral body means a body with no charged particles on it.

 [Watch Video Solution](#)

2. The charged particle in an atom that contributes positive charge is 'electron'.

 [Watch Video Solution](#)

3. State True or False.

Substances which allow charges to pass through them are called conductors.

 [Watch Video Solution](#)

4. A Switch is used to make or break an electric circuit.

 [Watch Video Solution](#)

5. The Zinc plate in a voltaic cell is usually coated with mercury to prevent polarization.

 [Watch Video Solution](#)

6. when bulbs are conneted to the same source, the brightness of bulb connected in series is more than the brightness of identical bulbs connected in parallel.

 [Watch Video Solution](#)

7. In household connections, no current passes through neutral wire when the switch is off.

 [Watch Video Solution](#)

8. Connecting many devies to a single socket leads to 'short circuit'



[Watch Video Solution](#)

9. Nichorome' is the material used to make heating elements.



[Watch Video Solution](#)

10. Electric bell works on 'heating effects of electric current'.

A. True

B. False

C. Both A and B

D. None of these

Answer: B



[Watch Video Solution](#)

11. Atom is considered neutral because it contains an equal number of _____ and _____ charges.



[Watch Video Solution](#)

12. _____ is a major component of an electric bell.

- A. Element
- B. Filament
- C. Electromagnet
- D. Permanent magnet

Answer: C



[Watch Video Solution](#)

13. Nichrome is the material used to make _____ elements.



[Watch Video Solution](#)

14. Materials that do not allow electric charges to flow through them are called _____.



[Watch Video Solution](#)

15. Lightning is a natural phenomenon involving _____ particles.



[Watch Video Solution](#)

16. In symbolic representation of an electric cell, the longer and shorter vertical lines represent _____ and _____ terminal, respectively.



[Watch Video Solution](#)

17. Mercury coated on zinc plate prevents the impurities from coming into contact with acid and prevents _____.



[Watch Video Solution](#)

18. _____ is a safety device that prevents excess flow of current through an appliance.



[Watch Video Solution](#)

19. When bulbs are connected to the same source, the brightness of bulb connected in parallel is _____ then the brightness of identical bulbs connected in series.



[Watch Video Solution](#)

20. Electric heater works on the basis of _____ the electric current.

A. Magnetic

B. Heating

C. Electrical

D. Mechanical

Answer: B



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21. If a glass rod is positively charged, then it consists of particles with

A. only positive charge.

B. only negative charge.

C. both negative and positive charges, but the number of positively charged particles are more than the number of negatively charged particles.

D. both negative and positive charges but the number of negatively charged particles are more than the number of positively charged particles.

Answer: C



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22. A body can be charged by

- A. friction
- B. induction
- C. conduction
- D. All of the above

Answer: D



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23. Which of the following is not a consumer of electrical energy ?

- A. A generator
- B. An electric motor
- C. An electromagnet
- D. A bulb

Answer: A

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24. Find the false statement about a cell.

- A. Symbol of a cell is 
- B. Longer line represents positive terminal.
 - C. Shorter line represents negative terminal.
 - D. Cell is a major source of electrical energy.

Answer: D



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25. Three identical cells of e.m.f. $1.5V$ are connected in parallel. The total e.m.f. of the combination is _____.

A. 1.5

B. 4.5

C. 0.5

D. 3

Answer: A



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26. Three bulbs are connected in a circuit in an identical way. When a fourth bulb is also connected to the same circuit in the same way,

brightness is reduced then the bulbs are connected in _____

- A. series
- B. parallel
- C. It can happen in both cases
- D. It is not possible

Answer: A



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27. How many hours must a 200 W bulb glow to consume 1 unit electrical energy.

- A. 1
- B. 2
- C. 5
- D. 10

Answer: C



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28. The amount of heat produced in a heating element depends on

- A. its length
- B. its cross-sectional area
- C. nature of the material
- D. All of the above

Answer: D



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29. Which of the following statement is /are true about electromagnet ?

- A. It works on the principle of 'magnetic effects of electric current'.
- B. Electromagnets are used in electric bell.
- C. Electromagnets are used to lift heavy loads.
- D. All of the above

Answer: D

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30. A neutral body gets charged when it brought into contact with a charged body. This method of charging a body is called.

- A. charging by conduction
- B. charging by friction
- C. charging by Induction
- D. None of the above

Answer: A

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31. Which of the following electrical appliances work on the principal of the heating effect of electric current ?

- A. Electric iron
- B. Electric heater
- C. Electric bulb
- D. All of the above

Answer: D

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32. Choose the correct statement(s) in case of a voltaic cell.

- (A) Cathode used is Zn and anode used is copper.
- (B) The electrolyte used is dilute sulphuric acid.

- A. Only A is true
- B. Only B is true
- C. Both A and B are true
- D. Both A and B are false

Answer: C

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33. Choose the correct statement :

When a positively charged body is placed on the ground.

- (A) the electrons flow from the ground and neutral-ize the charge.
- (B) the electrons flow from the ground and charge it negatively.

- A. only A is true
- B. only B is true
- C. Both A and B are true
- D. Both A and B are false

Answer: A



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34. A magnetic needle placed near a current carrying conductor deflects due to the

- A. heating effect of electric current.
- B. magnetic effect of electric current.
- C. chemical effect of electrical current.
- D. Both (b) and (c)

Answer: B



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35. An electric generator (Dynamo) converts

- A. mechanical energy into electrical energy.
- B. electrical energy into mechanical energy.
- C. chemical energy into electrical energy.
- D. chemical energy into mechanical energy.

Answer: A

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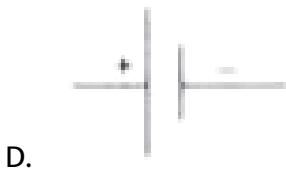
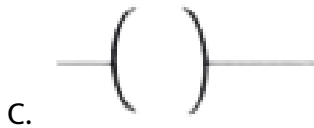
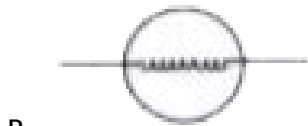
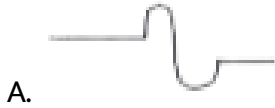
36. Which of the following is a good conductor of electricity.

- A. impure water
- B. glass
- C. ebonite
- D. wood

Answer: A

 [Watch Video Solution](#)

37. Which of the following is the symbol of fuse?



Answer: A

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38. The commercial unit of electrical energy is _____

A. Wh

B. kWh

C. Joule

D. None of these

Answer: B



[Watch Video Solution](#)

39. The bulbs in houses are connected in

A. parallel combination.

B. series combination.

C. series and parallel.

D. neither in series nor in parallel.

Answer: A



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40. The device used to measure electric current in a circuit is called _____

- A. speedometer
- B. ammeter
- C. voltmeter
- D. kilowatt hour meter

Answer: B



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41. Arrange the following steps in sequential order to demonstrate the magnetic effect of the electric current using magnetic compass.

(A) Wind an insulated conducting wire around the magnetic compass such that the axis of the coil is directed along east west direction and connect the free ends of the wire to a cell through a switch.

(B) Take a magnetic compass.

(C) When current flows through the conducting wire, it behaves as a magnet and deflects the compass needle.

(D) When the switch is closed, the magnetic needle in the compass deflects from its initial position and when the switch is open, the needle comes back to its initial position.

A. BADC

B. CBAD

C. ACBD

D. ABCD

Answer: A



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42. Two electric bulbs of 100 W each is used for 10 hours in the month of June. Write the following steps in sequential order to find the number of units of electricity consumed in the month of June.

(A) The number of units of electricity consumed by both bulbs in the

month of June is the total electrical energy consumed by bulbs expressed in Wh divided by $100 Wh$.

(B) Note the rated power of each electric bulb, time of electrical consumption of each bulb per day from the given data.

(C) We know, one electrical unit = $1kWh$ or $1000Wh$.

(D) Calculate the amount of electrical energy consumed by both the bulbs in the month of June using, (sum of the electrical power of both the bulb) \times (time of consumption in one day) \times 30 days.

A. BACD

B. ABCD

C. BDCA



D. DCBA

Answer: C



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43. Match the following

Column A		Column B	
A. A battery	()	a. Good conductor	
B. Metal	()	b. Mechanical energy is converted into electric energy	
C. A generator	()	c. 	
D. Filament bulb	()	d. Heating effect of electricity	
E. Ammeter	()	e. 	



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Column A

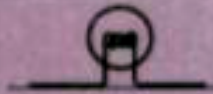
Column B

- | | |
|-----------------------|--|
| A. A cell | () a. Study of electric charges at rest |
| B. Bulb | () b. Close or open an electric circuit |
| C. Static electricity | () c. Substitute for fuse |

44.

D. Switch

() d.



E. MCBs

() e.

Prevent unauthorized usage of current

F. Main fuse at kW h metre

() f.

Converts chemical energy into electrical energy

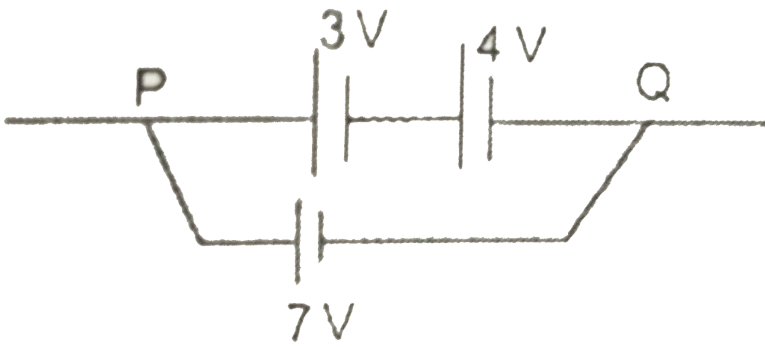


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Concept Application Level 2

1. Three batteries are connected as shown in the figure.

Then the total emf in the circuit is ____ V.

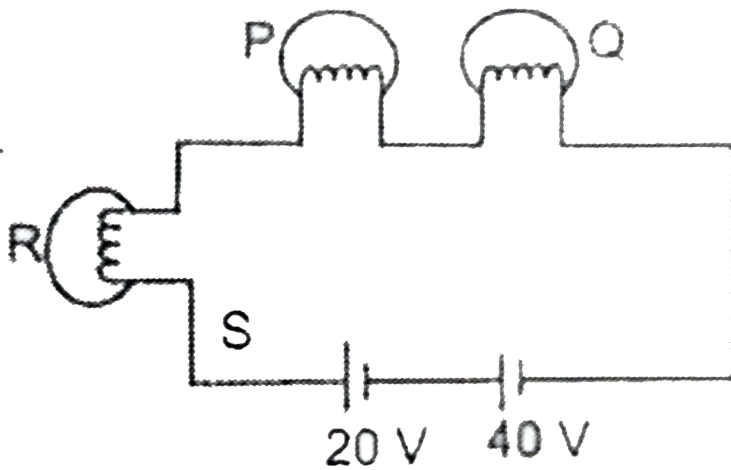


- A. 3
- B. 4
- C. 7
- D. 14

Answer: C

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2. Three identical bulbs are connected as shown in figure. Choose the correct statement.



- A. All bulbs are in a series combination.
- B. If bulb R is removed, bulbs P and Q will still glow.
- C. The total e.m.f in the circuit is 40 V.
- D. The given circuit is an open circuit.

Answer: A

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3. A positively charged body is brought in contact with the cap of gold leaf electroscope. Whose strips are neutral, then

- A. positive charge flows from the body to the strips and both the strips acquire positive charge.
- B. due to like charges on strips, they attract each other.
- C. if a positively charged body is removed the gap between the strips decreases.
- D. Both (a) and (c).

Answer: A



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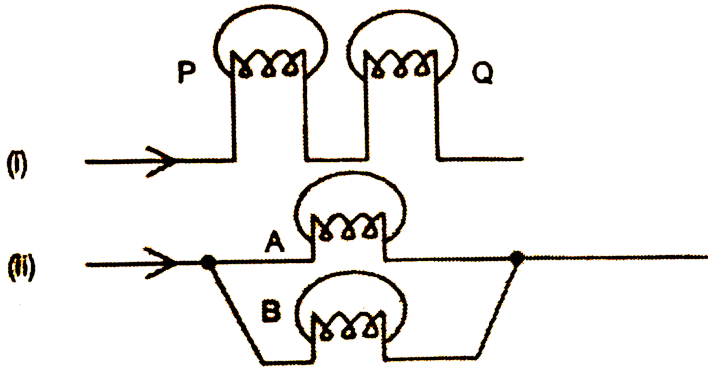
4. Choose the correct statement:

When the same current(i) flows through two circuits as shown in the figures, then (assume that all bulbs are identical)

(A) bulbs in first combination glow with more brightness.

(B) bulbs in second combination glow with more brightness.

(C) bulbs in both the combination glow with equal brightness.



A. Only A is true

B. Only B is true

C. Both A and B are true

D. Cannot be determined

Answer: A

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5. A glass rod is rubbed against a silk cloth, then

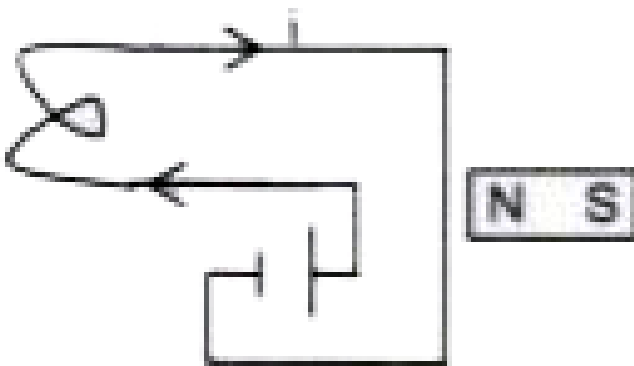
A. the glass rod acquires a positive charge due to loss of electrons.

- B. the silk cloth acquires negative charge due to gain of electrons.
- C. if these two bodies are again brought in contact the net charge on them is zero.
- D. All of the above

Answer: D

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6. A magnet is brought close to a current carrying conductor as shown in figure, then



A. it will be repelled by the conductor.

B. it will be attracted by the conductor.

C. it will not show any effect.

D. it will be just deflected.

Answer: D

 [View Text Solution](#)

7. Three dry cells are connected as shown in the



figure. If e.m.f

of each cell is 2 V, then the e.m.f. of the combination is _____ V.

A. 2

B. 6

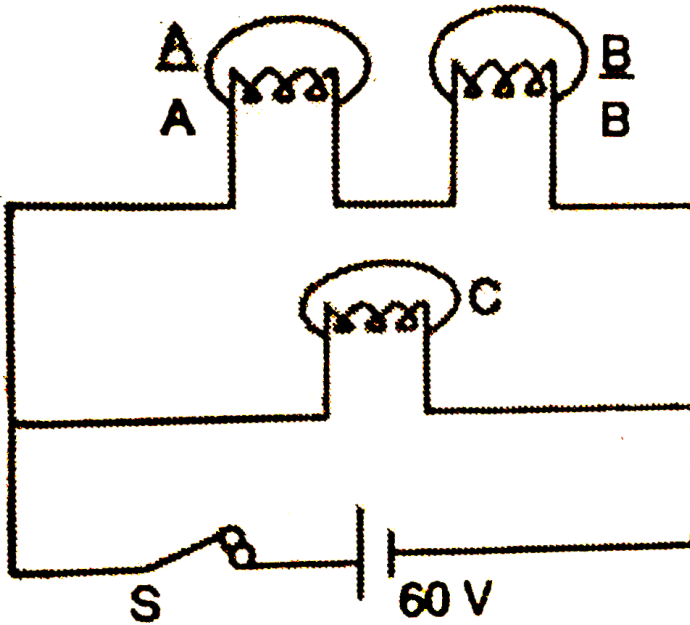
C. 3

D. 4

Answer: B

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8. Choose the correct statement about the given circuit: Three identical bulbs are connected as shown in the figure.



A. Bulbs A and B are in parallel with bulb 'C'.

B. The potential (e.m.f) in the circuit is 60 V.

C. When switch 'S' is turned off all bulbs glow with the same brightness.

D. Both (a) and (b)

Answer: D



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9. When a positively charged and another negatively charged bodies with equal magnitude of charge are brought simultaneously in contact with the cap of a positively charged electroscope, then the strips

A. move apart.

B. come closer.

C. remains unaffected.

D. Cannot be determined

Answer: B



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10. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero.
- C. it consists of equal positive and negative charge.
- D. Both (b) and (c)

Answer: D



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11. What happens when a current carrying metallic comb is placed close to small iron filings?

- A. iron filings will fly away from the comb, when switch is turned off.

B. iron filings align in the direction of the magnetic field produced around the metallic comb.

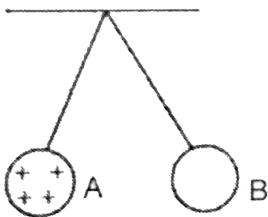
C. iron filings will be attracted by the comb.

D. Both (b) and (c)

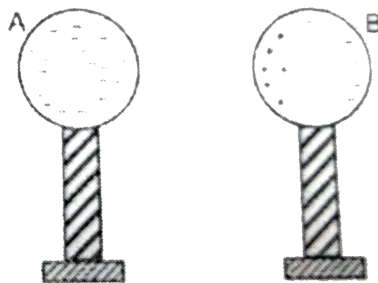
Answer: B

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12. (a) Two charged bodies, A and B are suspended from a fixed point with the help of silk threads as shown in the figure. If A is positively charged can we identify the nature of charge on 'B' ?



(a)



(b)

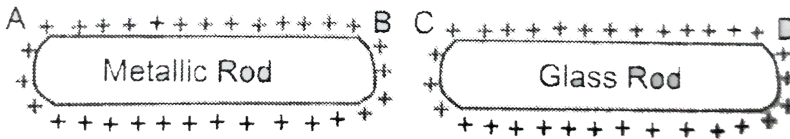
(b) A negatively charged conducting sphere A and a neutral sphere B are

kept on insulating stands and brought close to each other. The charge distribution is as shown in the figure.

Is B charged? What type of force exists between A and B?

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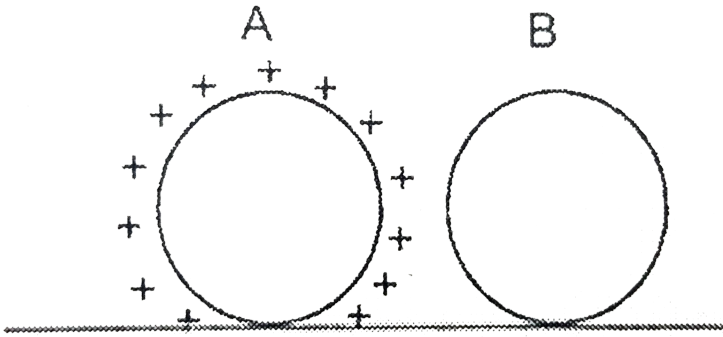
13. Raghavan found a metallic rod AB and a glass rod CD both positively charged and placed on an insulating table. He wanted to know what would happen to the charges on AB and CD if he touched both the rod at A and C? Discuss.



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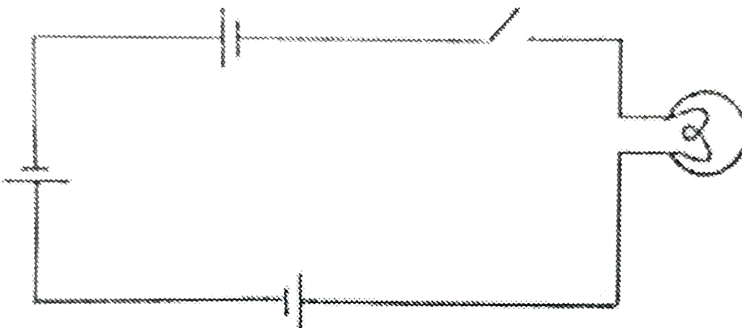
14. Two identical, small metallic spheres A and B are placed side by side on an insulating smooth table as shown in the figure. If A is positively

charged and held fixed with the table, discuss the motion of B.



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15. Observe the circuit and state whether the cells are connected in series or parallel. If each cell is of e.m.f. $1.5V$, then find the total e.m.f applied across the bulb connected.



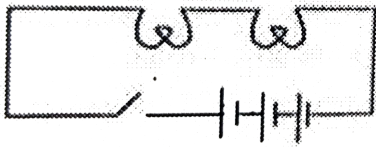
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16. Three identical cells of e.m.f. $1.5V$ are given. Find how we can arrange them to get a total e.m.f. of

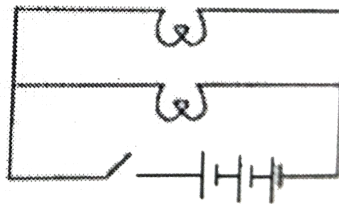
(a) $1.5V$, (b) $3V$, (c) $4.5V$.

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17. Prahar took two identical heating elements and connected them to a battery in two different ways as shown in the figure. When he switched ON the switch, is the heat developed in each element the same or different in both the cases ?



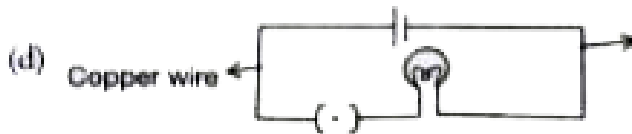
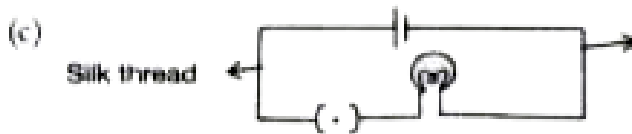
(a)



(b)

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18. Identify whether the following circuits are open or closed.



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19. What is the nature of materials used to make the 'filament' of an electric bulb and the 'fuse wire' used in electric fuse? Compare them.

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20. Define live and neutral wires.



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21.

https://d10lp6p6xz60nq.cloudfront.net/physics_images/PAT_CHE_OXI_B05_C11



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22. We observe the bulb glowing when the switch is 'ON'. Can we conclude that charges instantly move from the 'switch' to the bulb ? Discuss.



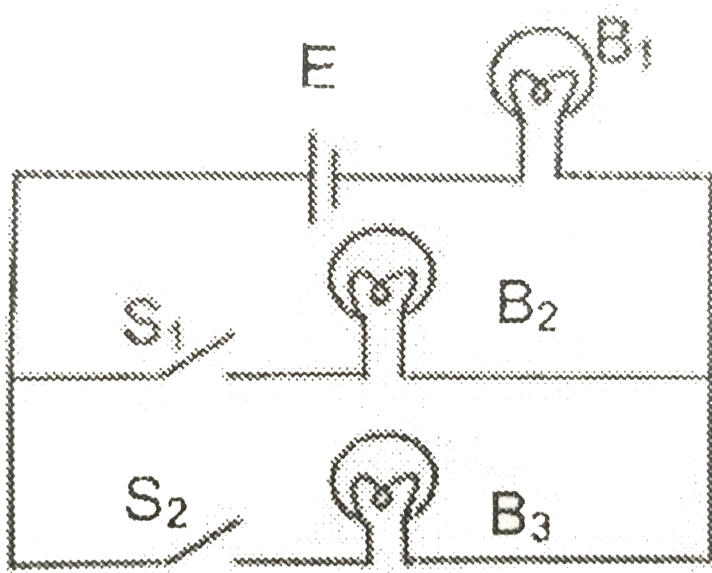
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23. What is a depolarizer and how does it work ?



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24. Gourang made an electric circuit with three bulbs B_1 , B_2 and B_3 a cell and two switches S_1 and S_2 as shown in figure. He notes his observation when



(a) S_1 is closed and S_2 is open,

(b) S_2 is closed and S_1 is open.

He also found that a bulb whose failure made the circuit 'open' irrespective of the status of S_1 and S_2 . What are his observations?

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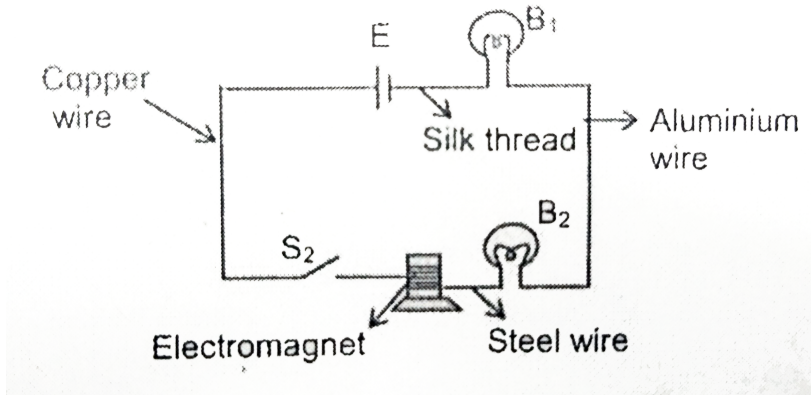
25. Saket was repairing an electric bell. By mistake, instead of an electromagnet, he placed a permanent magnet in the electric bell. Explain, what changes do you observe.

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26. Ravinder was inspired by reading the autobiography of Thomas Alva Edison and changed a portion of his room into a laboratory. In his laboratory he performed an activity that demonstrates both 'heating effect' and 'magnetic effect' of electric current. He connected different components with different wires and the connections are represented by the following circuit diagram.

To his disappointment, he was not successful in his effort. Observe the

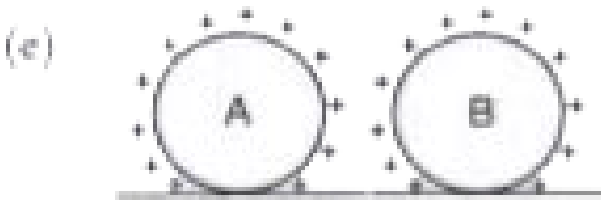
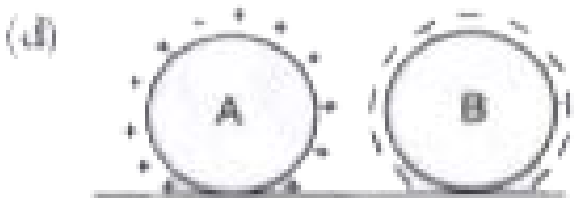
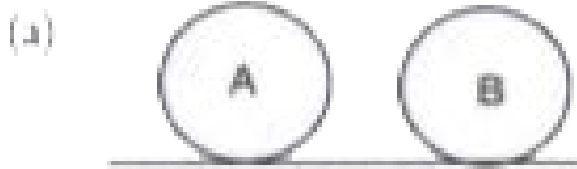
circuit and suggest modifications to make his effort successful.



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Concept Application Level 3

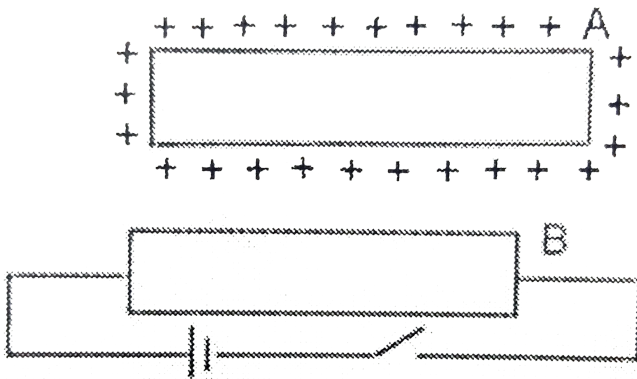
1. Describe the electrostatic force that exists between A and B in the following cases.



2. We know that (a) like electrical charges repel each other and (b) substances which allow charges to move through them are called conductors. In the light of these facts, find where the charge placed on a conductor resides.

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3. A and B are two identical conducting rods. A is given positive charge and B is connected to a cell as shown in the figure. Will there be any change in the electrostatic force between A and B if the switch is closed ?



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4. With the help of an electroscope, how can we identify the presence and nature of charge on a body?



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5. Three identical cells E_1, E_2, E_3 and three identical bulbs B_1, B_2 and B_3 are connected as shown in the circuit.

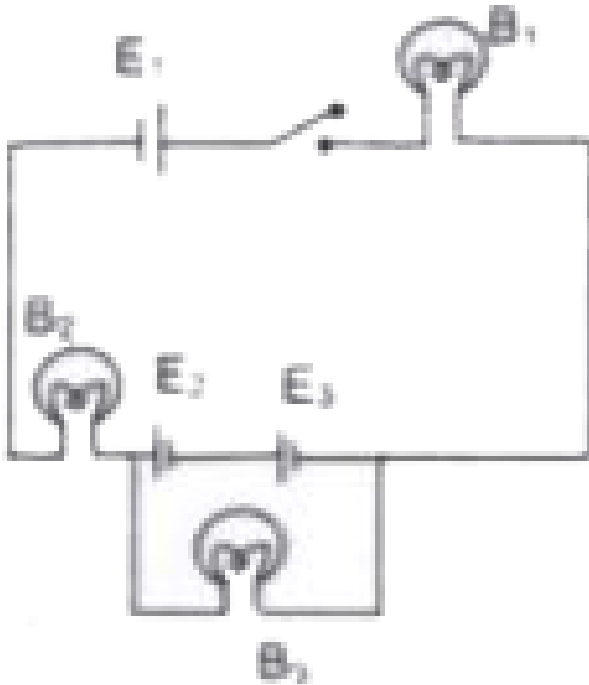
Find how E_1, E_2, E_3 and B_1, B_2, B_3 are connected, whether in parallel or in series?



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6. Three identical cells E_1, E_2, E_3 and three identical bulbs B_1, B_2 and B_3 are connected as shown in the circuit.

Compare the brightness of the bulbs.



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7. Usually we use two different types of sockets (a) two-pin socket and (b) three-pin socket. What purpose does the third pin in a three-pin socket serve ?

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8. Pranith received an electric bill for the month of April. He started verifying it by calculating the electrical energy consumed by a 2000 W electrical appliance that is used for two hours every day in his workshop. In his house he used bulbs of 100 W for 4 hours every day in the month of April, which consumes the same electrical energy as that of the electrical appliance in the workshop. Find the number of bulbs Pranith uses in his house.

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9. Which effect of electricity is used in electrotyping? Discuss.

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10. Do all bulbs we use work on the principle of heating effects of electric current? Discuss.

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11. What make electrical energy so useful for mankind ?



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Assessment Test Test 1

1. Write the following steps in sequence that explains the charging of a body by conduction. (A) Bring this positively charged glass rod in contact with a (neutral) uncharged metallic body, because of this the metallic body also becomes positively charged. (B) Take a glass rod and rub it with silk cloth. (C) Some electrons move from the glass rod to the silk cloth because of this the glass rod becomes positively charged.

A. ABC

B. BCA

C. ACB

D. BAC

Answer: B

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2. Write the following steps in sequence to show that the like charges repel each other. (A) Rubbing both the glass rods with cotton cloth develops the same type of charge on them. (B) Take two glass rods and charge both the rods by friction. (C) Suspend both the glass rods with the help of two silk threads and bring them nearer. (D) The glass rods repel each other showing that like charges repel each other.

A. ABCD

B. DCBA

C. BACD

D. BADC

Answer: C



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3. Identify the correct statement/s related to local action in a voltaic cell.

(a) Carbon and iron particles present in zinc plate act as impurities.

(b) Impurities react with acid and with the zinc particles to form a large number of tiny cells creating local electric circuits.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and (B) true.

D. Both (A) and (B) are false.

Answer: C



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4. A glass rod is rubbed against a silk cloth, then

- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charge due to gain of electrons.
- C. if these two bodies are again brought in contact the net charge on them is zero.
- D. All of the above

Answer: D

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5. Assertion (A): A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

Reason (R): 1 unit of electrical energy = 1000 k Wh .

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true, but R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: C

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6. Assertion (A) : All the bulbs connected in parallel glow brightly.

Reason (R) : All the bulbs are connected directly to a battery and derive the required electrical energy.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true, but R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A

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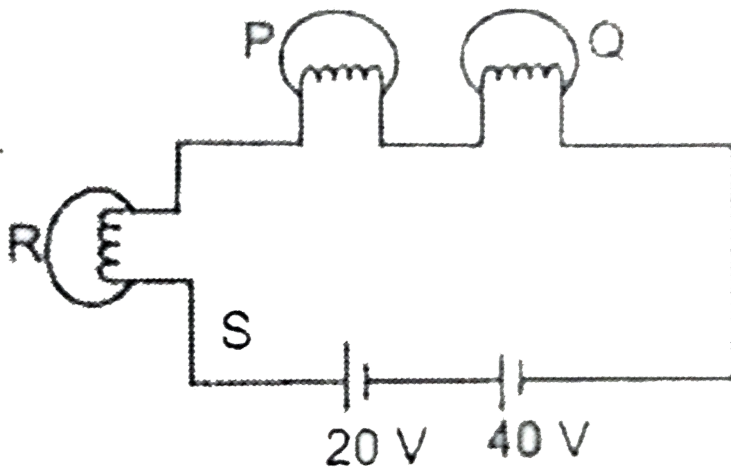
Column A		Column B	
(A) Cell	()	(a) Nature of the charge	
(B) Discharge phenomenon	()	(b) Earth connector	
(C) Gold leaf electroscope	()	(c) Spark and crackling sound	
(D) E.M.F of dry cell	()	(d) Converts chemical energy into electrical energy	
(E) Three-pin socket	()	(e) 1.46 V	

7.



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8. Three identical bulbs are connected as shown in figure. Choose the correct statement.



- A. All bulbs are in a series combination
- B. If bulb R is removed, bulbs P and Q will still glow.
- C. The total e.m.f in the circuit is 40 V.
- D. The given circuit is a closed circuit.

Answer: A

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9. Choose the correct statement(s) in case of a voltaic cell.

(A) Cathode used is Zn and anode used is copper.

(B) The electrolyte used is dilute sulphuric acid.

- A. Only (A) is true.
- B. Only (B) is true.
- C. Both (A) and (B) are true.
- D. Both (A) and (B) are false.

Answer: C



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10. The porous pot in Leclanche cell contains _____ with a carbon rod dipped in it.

- A. potassium dichromate and dilute sulphuric acid.
- B. chemical mixture of ammonium chloride, zinc chloride with manganese dioxide and powdered carbon present in form of paste.
- C. powdered carbon and manganese dioxide.

D. dilute sulphuric acid.

Answer: C



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11. Which of the following is a bad conductor of electricity ?

A. Gold

B. Copper

C. Pure alcohol

D. Living plant

Answer: C



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12. An electric motor converts

- A. electrical energy into mechanical energy.
- B. mechanical energy into electrical energy.
- C. heat energy into electrical energy.
- D. None of the above.

Answer: A

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13. What happens when a current carrying metallic comb is placed close to small iron filings?

- A. iron filings will fly away from the comb, when switch is turned off.
- B. iron filings align in the direction of the magnetic field produced around the metallic comb.
- C. iron filings will be attracted by the comb.
- D. Both (b) and (c).

Answer: B



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14. Assertion (A): A 200 W bulb consumes 2 units of electrical energy when it is used for 10 hours.

Reason (R): 1 unit of electrical energy = 1000 k Wh .

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true, but R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



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15. A glass rod is rubbed against a silk cloth, then

- A. the glass rod acquires a positive charge due to loss of electrons.
- B. the silk cloth acquires negative charge due to gain of electrons.
- C. if these two bodies are again brought in contact, the net charge on them is zero.
- D. All of the above

Answer: D

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Assessment Test Test 2

1. Write the following steps in sequence that explain the phenomenon of redistribution of charges in an uncharged body in presence of a charged body. (A) As a result, at one end of the neutral body there is an excess of negatively charged particles and the other end there is an excess of positively charged particles. (B) Place a positively charged body near a

neutral body. (C) The negatively and positively charged particles in the neutral body get attracted and repelled by the positively charged body.

A. BCA

B. CAB

C. ACB

D. BAC

Answer: A



[View Text Solution](#)

2. Write the following steps in sequence to show that unlike charges attract each other.

(A) Take an ebonite rod and a glass rod and tie two silk threads so that they can be suspended.

(B) The glass rod and ebonite rod when brought near attract each other showing that charges attract each other.

Rub ebonite rod with woollen cloth and glass rod with silk cloth and suspend them in air by holding silk threads.

A. ACB

B. CBA

C. BCA

D. ABC

Answer: A



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3. Identify the correct statement/s related to polarization in voltaic cell.

(a) When current passes through the voltaic cell, zinc plate starts dissolving in the acid and produces hydrogen bubbles.

(b) These hydrogen bubbles accumulate on the copper plate and develop resistance to the flow of current.

A. Only (A) is true.

- B. Only (B) is true.
- C. Both (A) and (B) are true.
- D. Both (A) and (B) are false.

Answer: C

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4. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero.
- C. it consists of equal positive and negative charge.
- D. Both (b) and (c).

Answer: D

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5. Assertion (A) : The electrical appliances connected in series do not work to their full capacity.

Reason (R) : The electrical energy drawn from the battery is shared by all the appliances connected in series.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true, but R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



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6. Assertion (A): A 1000 W bulb when used for 1 hour consumes the same number of electrical units as that of 100 W bulb that is used for 10 hours.

Reason (R) : On electrical unit is charged when one kilowatt hour electrical energy is consumed.

- A. Both A and R are true and R is the correct explanation of A.
- B. Both A and R are true, but R is not the correct explanation of A.
- C. A is true but R is false.
- D. Both A and R are false.

Answer: A



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Column A		Column B	
(A) Nature of the charge	()	(a) Acts as negative and positive plates	
(B) Lightening	()	(b) Live wire and neutral wire are connected	
(C) Cells connected in series	()	(c) Involves charged particles	
(D) Zinc and carbon rods in Leclanché cell	()	(d) Their total emf is sum of e.m.f of all the cells used	
(E) kWh meter	()	(e) Deflections in the metallic strips	

(a) A → d, B → c, C → a, D → e, E → b

(b) A → b, B → c, C → d, D → e, E → a

(c) A → e, B → c, C → d, D → a, E → b

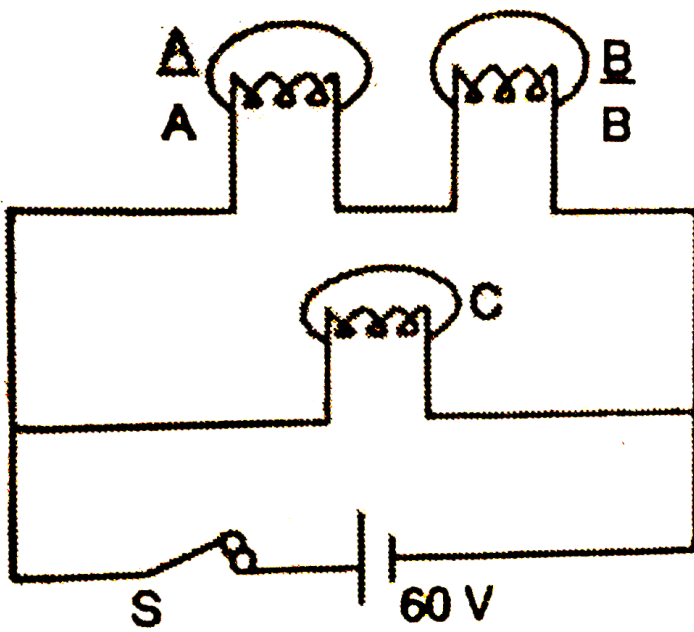
(d) A → b, B → c, C → a, D → e, E → d

7.1 → .



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8. Choose the correct statement about the given circuit: Three identical bulbs are connected as shown in the figure.



- A. Bulbs A and B are in parallel with bulb C.
- B. The potential (e.m.f) in the circuit is 60 V.
- C. When switch 'S' is turned on all bulbs glow with the same brightness.
- D. Both (a) and (b).

Answer: D



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9. Choose the correct statement : -

(A) In case of an electric cell, chemical energy is converted into electrical energy.

(B) combination of electric cells is called battery.

A. Only (A) is true.

B. Only (B) is true.

C. Both (A) and B are true,

D. Both (A) and (B) are false.

Answer: C



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10. The brass of cap of the carbon and the zinc can of the dry cell act as _____ and _____ poles, respectively.

A. positive, negative

B. positive, positive

C. negative, positive

D. negative, negative

Answer: A



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11. Which of the following is not a bad conductor of electricity?

A. impure water

B. Glass

C. Ebonite

D. Wood

Answer: A



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12. An electric generator (Dynamo) converts

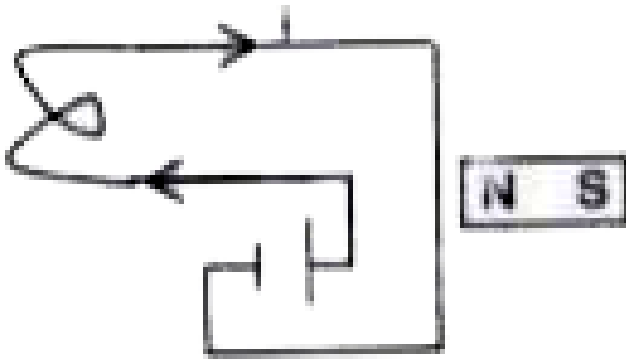
- A. mechanical energy into electrical energy.
- B. electrical energy into mechanical energy.
- C. chemical energy into electrical energy.
- D. chemical energy into mechanical energy.

Answer: A



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13. A magnet is brought close to a current carrying conductor, as shown in figure, then,



- A. it will be repelled by the conductor.
- B. it will be attracted by the conductor.
- C. it will not show any effect.
- D. it will be just deflected.

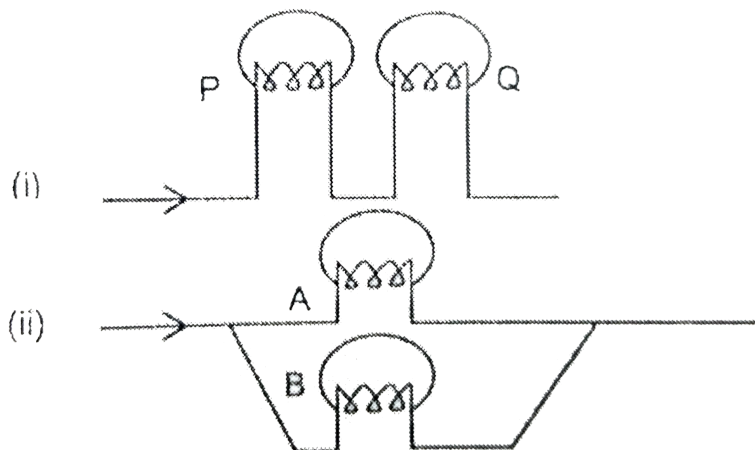
Answer: D

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14. Choose the correct statement:

When the same current (i) flows through two circuits as shown in the

figures then (assume that all bulbs are identical)



A. Only (A) is true

B. Only (B) is true

C. Only (C) is true

D. Cannot be determined

Answer: A



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15. When a neutral body is brought closer to a negatively charged body, then

- A. it becomes positively charged.
- B. the net charge on it is zero.
- C. it consists of equal positive and negative charge.
- D. Both (b) and (c).

Answer: D



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