PHYSICS

BOOKS - SURA PHYSICS (TAMIL ENGLISH)

ELECTRICITY

Textbook Evaluation Choose The Correct Answer

1. Which of the following is correct ?

A. Rate of change of charge is electrical power

B. Rate of change of charge is current

C. Rate of change of energy is current.

D. Rate of change of current is charge.

Answer: B

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Textbook Evaluation

1. SI unit of resistance is

A. mho

B. joule

C. ohm

D. ohm meter

Answer: C

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2. In a simple circuit, why does the bulb glow when you close the switch ?

A. The switch produces electricity

B. Closing the switch completes the circuit

C. Closing the switch breaks the circuit

D. The bulb is getting charged

Answer: B

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3. Kilowatt hour is the unit of

A. resistivity

B. conductivity

C. electrical energy

D. electrical power

Answer: C

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4. The ratio of the potential difference to the current is known as _____.

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5. The wiring in a house consists of _____ circuit.

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6. The power of an electric device is a product of _____ and _____.

Watch Video Solution

7. LED stands for_____.

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8. MCB is used to protect house hold electrical appliances.

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9. Define th SI unit of electric current. (or) What is one second in SI system of units? (or) Define one ampere (S.I standard for current)

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10. One unit of electrical energy consumed is equal to 1000 kilowatt hour.

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11. The effective resistance of three resistors connected in series is lesser than the lowest of the individual resistances.

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12. Assertion: In a simple battery circuit the point of highest potential is positive terminal of the battery.

Reason: The current flows towars the point of the highest potential.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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13. Assertion: LED bulbs are far better than incandescent bulbs.

Reason: LED bulbs consume less power than indanescent bulbs.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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14. What happens to the resistance, as the conductor is made thicker ?

15. Why is tungsten metal used in bulbs, but not in fuse wires ?

16. Name any two devices, which are working on the heating effect of the electric current .

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17. What is the role of the earth wire in domestic circuits ?

Watch Video Solution

18. State Ohm's law .

Watch Video Solution

19. Distinguish between the resistivity and conductivity of a conductor .

Watch Video Solution

20. What connection is used in domestic appliances and why ?

Watch Video Solution

21. What is meant by electric current ?

Watch Video Solution

22. Define the unit of current.

Watch Video Solution

23. The device used to measure electric current is _____.

Watch Video Solution

24. Joule law of heating is _____.

Watch Video Solution

25. An alloy of nickel and chromium is used as the heating element . Why ?

Watch Video Solution

26. How does a fuse wire protect electrical appliances ?

Watch Video Solution

27. Explain about domestic electric circuits. (circuit diagram not required)

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28. What are the advantages of LED TV over the normal TV ?

Watch Video Solution

29. List the marits of LED bulbs.

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Textbook Evaluation Fill In The Blanks

1. When a circuit is open, _____ cannot pass through it.

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Textbook Evaluation State Whether The Following Statements Are True Or False If False Correct The Statement

1. Ohm's law states the relationship between power and voltage.

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Textbook Evaluation Match The Items In Column I To The Items In Column Ii

1. 

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Textbook Evaluation Assertion And Reason

1. Assertion: Electric appliances with a metallic body have three wire connections.

Reason: Three pin connections reduce heating of the connecting wires.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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Textbook Evaluation Very Short Answer Questions

1. Define the unit of current.

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Textbook Evaluation Short Answer Questions

1. Define electric potential and potential difference.

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Textbook Evaluation Long Answer Questions

1. With the help of a circuit diagram derive the formula for the resultant resistance of three resistances connected:a) in series and b) in parallel.

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Textbook Evaluation Numerical Problems

1. An electric iron consumes energy at the rate of 420 W when heating is at the maximum rate and 180 W when heating is at the minimum rate. The applied voltage is 220V. What is the current in each case.

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2. A 100 watt bulb is used for 5 hours daily and four 60 watt bulbs are used for 5 hours daily.

Calculate the energy consumed (in kWh) in the month of January.

Watch Video Solution

3. A tourch bulb is rated at 3 V and 600 mA. Calculate

a) Power

b) Resistance

c) Energy consumed if it is used for 4 hour.

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4. A piece of wire having a resistance R is cut into five equal parts.

a) How will the resistance of each part of the wire change compared with the original resistance ?

b) If the five parts of the wire are placed in parallel, how will the resistance of the combination change ?

c) What will be the ratio of the effective resistance in series connection to that of the parallel connection ?

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Textbook Evaluation Hots

1. Two resistors when connected in parallel give the resultant of 2 ohm, but when connected in series the effective resistance becomes 9 ohm ? Calculate the value of each resistance.

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2. How many electrons are passing per second in a circuit in which there is a current of 5 A ?

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3. A piece of wire of resistance 10 ohm is drawn out so that its length is increased to three times its original length. Calculate the new resistance.

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Government Exam Questions Answers

1. Calculate the resistance of a conductor through which a current of 2A passes, when the potential difference between its ends is 30V.

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2. A charge of 10 coulomb flows through a bulb in 5 second. What is the current through the bulb ?

Watch Video Solution

3. Calculate the curren and the resistance of a 100W, 200V electric bulb in an electric circuit.

Watch Video Solution

Additional Questions Answers Choose The Correct Answer

1. A series circuit consists of three resistors with values of 140, 250 and 220. The total resistance is _____.

A. 330

B. 610

C. 720

D. None of above

Answer: B

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2. When will be the current flow in a circuit ?

A. A switch is closed

B. A switch is opened

C. Switch is either open or closed

D. None of above

Answer: A

 Watch Video Solution

3. When one of three series resistors is removed from a circuit and the circuit is reconnected the current _____.

A. increase by half

B. increases

C. decreases by half

D. None of above

Answer: B

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4. The SI unit of power is _____.

A. joule

B. ampere

C. watt

D. ohm

Answer: C

Watch Video Solution

5. A parallel circuit consist of three resistors with values of 430, 210, and 100. The total resistance is _____.

A. 0.017 ohm

B. 58.82 ohm

C. 58.82 kilo ohm

D. None of above

Answer: B

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6. According to Ohm's law if voltage increase and resistance stays the same and _____.

A. Resistance decreases

B. Current increases

C. Current remains the same

D. Current decreases

Answer: B

Watch Video Solution

7. The amount of work done in joules when one unit electric charges moves from one point to another point in an electric circuit is called _____.

A. resistance

B. Potential difference

C. Current

D. Charge

Answer: B

Watch Video Solution

8. the resistance of material depends on _____.

A. Temperature

B. Length of conductor

C. Area of cross-section

D. All of above

Answer: D

Watch Video Solution

9. The relation between potential difference (V) and Current (I) is :_____.

A. $V \propto I$

B. $V \propto I^2$

C. $V \propto \frac{I}{1}$

D. None of above

Answer: D

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10. The relation between potential difference (V) and Current (I) was discovered by :_____.

A. Volt

B. Ohm

C. Newton

D. Ampere

Answer: B

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11. _____ of a material which oppose the flow of current in a conductor.

A. Capacitor

B. Resistors

C. Fuse wire

D. Inductor

Answer: B

Watch Video Solution

12. The resistance of a conductor directly proportional to _____.

A. Length

B. Area

C. Volt

D. Current

Answer: A

Watch Video Solution

13. Which of the following laboratory apparatus is used during the verification of Ohm's law ?

A. Voltmeter

B. Ammeter

C. Rheostat

D. All of above

Answer: D

View Text Solution

14. Kilowatt hour is the unit of

A. power

B. Potential difference

C. Force

D. Electrical energy

Answer: D

 Watch Video Solution

15. If resistance decreases, then current will _____.

A. increase

B. double

C. decrease

D. constant

Answer: A

Watch Video Solution

16. The resistance of a conductor is inversely proportional to its_____.

A. Volt

B. Length

C. Area

D. None of above

Answer: C

Watch Video Solution

17. Why battery is used in the circuit ?

A. Measure current

B. Maintain a potential difference

C. Oppose the current

D. Measure potential

Answer: B

Watch Video Solution

18. Conductance is expressed in terms of :_____

A. mho

B. ohm/m

C. ohm

D. mho/m

Answer: A

Watch Video Solution

19. What happens when ammeter connected in parallel _____.

A. Open circuited

B. Closed circuited

C. Short circuited

D. None of above

Answer: C

Watch Video Solution

20. If two unequal resistors connected in parallel then_____.

A. The voltage is same in both resistor

B. The current is same in both resistor

C. The voltage is larger in one of the resistor

D. The current is large in one of the resistor

Answer: A

Watch Video Solution

21. What does a switch do ?

A. Oppose the current

B. Open and close the circuit

C. Provide curent

D. Store the energy

Answer: B

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22. If there are two bulbs i.e., 150W bulb and 60W bulb so which has more resistance ?

A. 60W

B. 150W

C. both a and b

D. None of above

Answer: A

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23. If resistance of a wire is r ohms and wire is streched to double its length, then what is its resistance ?

A. r

B. 2r

C. 4r

D. r/2

Answer: C

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24. In parallel combination, resistance decrease due to increase in _____.

A. Area of cross section

B. Voltage

C. Length

D. Current

Answer: D

Watch Video Solution

25. The device which easily closes or opens an electric circuit is called as_____.

A. Switch

B. Cell

C. Key

D. Bulb

Answer: C

Watch Video Solution

26. A small wire presents inside the bulb is called _____.

A. Conductor

B. Filament

C. Insulator

D. None of above

Answer: B

Watch Video Solution

27. If one of the resistor in a parallel circuit is removed, the total resistance will be_____.

A. Doubled

B. Decreases

C. Increases

D. constant

Answer: C

View Text Solution

28. All good conductors have high _____.

A. Resistance

B. Specific resistance

C. Voltage

D. None of above

Answer: D

Watch Video Solution

29. A short circuit has_____.

A. Non resistance

B. No conductance

C. Low current

D. None of above

Answer: D

Watch Video Solution

30. If the resistance in a series circuit double total current will be_____.

A. doubles

B. halved

C. same

D. Increases

Answer: B

 Watch Video Solution

31. What happens to current and resistance if the voltage is doubled?

A. Current doubles and resistance doubles

B. Current doubles and resistance is halved

C. Current remains the same and resistance doubles

D. Current doubles and resistance remains the same

Answer: D

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32. Which is considered to be the common reference for a parallel circuit ?

A. Current

B. Resistance

C. Power

D. Voltage

Answer: D

View Text Solution

33. Why are copper wires used as connecting wires ?

A. Low resistivity

B. Low conductivity

C. High resistivity

D. Both A and B

Answer: A

Watch Video Solution

34. Direction of conventional current is from :_____

A. Negative terminal to positive terminal

B. In both the directions

C. Positive terminal to negative terminal

D. None of above

Answer: C

View Text Solution

35. conductivity is the reciprocal of

A. opposite

B. reciprocal

C. equal

D. None of above

Answer: B

Watch Video Solution

36. A ampere is given as _____.

A. $1C \times 1s$

B. $1C / 1s$

C. $1s / 1C$

D. None of above

Answer: B

Watch Video Solution

37. Which of the following relation is correct for voltage, work done and charge ?

A. $V = W \times Q$

B. $W = V \times Q$

C. $V = Q / W$

D. $W = V / Q$

Answer: B

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38. A complete electric circuit is called as

_____

A. open

B. short

C. closed

D. complete

Answer: C

Watch Video Solution

39. How many terminals an electric bulb consists of ?

A. 2

B. 4

C. 3

D. 1

Answer: A

Watch Video Solution

40. Fuse wire has _____.

A. low melting point

B. high pressure

C. low resistance

D. both (a) and (b)

Answer: D

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41. Which of the following produces large Joule heating effect ?

A. 1A curren through 2Ω resistor for 3 seconds

B. 1A current through 3Ω resistor for 2 seconds

C. 2A current through 1Ω resistor for 2 seconds

D. 3A current through 1Ω resistor for 1 second

Answer: D

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42. The heat produced in time is _____.

A. $H = \frac{V}{It}$

B. $\frac{t}{VI} = H$

C. $H = V\mathrm{I}t$

D. $H = \frac{I}{Vt}$

Answer: C

Watch Video Solution

43. The expression for the heat is _____.

A. $H = V\mathrm{I}t$

B. $H = I^2Rt$

C. $H = \dfrac{V^2}{\mathrm{R}}t$

D. all of above

Answer: D

Watch Video Solution

44. According to Joule's heating effects the law of current is

A. $1 \propto H^2$

B. $H \propto I^2$

C. $H \propto I$

D. both (b) and (c)

Answer: B

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45. Electric iron box and electric heater works on the principle of

A. heating effect of current

B. heating effect of voltage

C. heating effect of power

D. heating effect of emf

Answer: A

Watch Video Solution

46. A heating element used in the electric iron box and the electric heater is _____.

A. Tungsten

B. Nichrome

C. Lead

D. All of above

Answer: B

Watch Video Solution

47. In which one of the following heating effect of current is undesirable ?

A. electric iron

B. electric motor

C. Fuse wire

D. electric bulb

Answer: B

Watch Video Solution

48. Choose the correct statement.

A. Nichrome has two resistance and high melting point

B. Fuse wire has high resistance and low melting point

C. Nichrome has high resistance and low melting point

D. Fuse wire has low resistance and high melting point

Answer: B

 Watch Video Solution

49. A 110 W, 220 V bulb draws a current

A. 2A

B. 440A

C. 0.5A

D. 5.5 A

Answer: C

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50. The number of electrons in one coulomb of charge is_____.

A. 1.6×10^{19}

B. 6.25×10^{18}

C. 1.13×10^{11}

D. 8.85×10^{12}

Answer: B

Watch Video Solution

51. A complete electric circuit is called as _____

A. open

B. closed

C. complete

D. None of above

Answer: B

Watch Video Solution

52. The electric current in a closed circuit always flows from the _____ terminal of the electric cell to _____ terminal.

A. $-ve$ to $+ve$

B. $+ve$ to $-ve$

C. $+ve$ to $+ve$

D. none

Answer: B

View Text Solution

53. The motion of electric charges is called _____

A. electric resistance

B. electric voltage

C. electric power

D. electric current

Answer: D

Watch Video Solution

54. The resistivity of chromium is_____.

A. 1.62×10^{-8}

B. 6.84×10^{-18}

C. 12.9×10^{-8}

D. 2×10^{-7}

Answer: C

View Text Solution

55. Joule law of heating is _____.

A. $H = IR^2t$

B. $H = I^2t$

C. $H = I^2Rt$

D. None of above

Answer: C

 Watch Video Solution

56. _____ is the material used to make the filament in bulbs.

A. cadmium

B. tungsten

C. mercury

D. None of above

Answer: B

 Watch Video Solution

57. _____ is a protective conductor which saves us from electric shocks.

A. Electric appliance

B. Ammeter

C. Earth wire

D. Rheostat

Answer: C

Watch Video Solution

58. A _____ bulb has no filament.

A. cadmium

B. LED

C. Fluroscent

D. None of above

Answer: B

View Text Solution

59. the first LED television was a _____ display.

A. dichromatic

B. monochromatic

C. colourless

D. trichromatic

Answer: B

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60. _____ introduced the first commercial LED television in 2009.

A. Samsung

B. SONY

C. Panasonic

D. LG

Answer: A

Watch Video Solution

61. _____ is used to fix the magnitude of current through a circuit.

A. resistor

B. voltmeter

C. electric resistance

D. ammeter

Answer: A

Watch Video Solution

62. A galvanometer is used to indicate the _____.

A. direction

B. frequency

C. voltage

D. reference point

Answer: A

View Text Solution

63. A _____ is used to measure the potential difference.

A. Ammeter

B. Voltmeter

C. Rheostat

D. Galvanometer

Answer: B

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Additional Questions Answers Fill In The Blanks

1. Current passes from _____ potential to the _____ potential.

View Text Solution

2. SI unit of current is _____.

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3. The number of electrons in one coulomb of charge is_____.

Watch Video Solution

4. The device used to measure electric current is _____.

Watch Video Solution

5. The purpose of a rheostat is _____.

Watch Video Solution

6. What is the direction of current ?

Watch Video Solution

7. Resistance is used to fix the magnitude of _____.

Watch Video Solution

8. The amount of work done to move charge from one point to another is called _____.

Watch Video Solution

9. Unit of electric potential is _____.

Watch Video Solution

10. The hindrance presented by material of conductor to the smooth passing of current is

_____.

Watch Video Solution

11. Point to be kept in mind for verification of ohm's law is ammeter should be connected in _____ and voltmeter in _____.

View Text Solution

12. When a 40 V battery is connected across an unknown resistance, there is a current of 100

mA in the circuit. The value of resistance is _____.

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13. The resistance of a conductor directly proportional to _____.

Watch Video Solution

14. Nichrome is an alloy of _____ and Chromium.

Watch Video Solution

15. The graph between V and I is _____ for a conductor.

Watch Video Solution

16. _____ of a material which oppose the flow of current in a conductor.

Watch Video Solution

17. Resistance is _____ for different materials.

Watch Video Solution

18. When the current is doubled , the area of cross section is _____.

Watch Video Solution

19. When the length of the conductor is doubled , the current becomes_____.

Watch Video Solution

20. A conductor with highest resistivity is used in_____.

Watch Video Solution

21. The reciprocal of the reistance is _____

Watch Video Solution

22. Resistivity is _____ for a given material.

Watch Video Solution

23. The unit of specific resistance is _____.

Watch Video Solution

24. Conductivity is _____ for conductors than insulators.

Watch Video Solution

25. _____ is represented by Joule/coulomb.

Watch Video Solution

26. LED stands for_____.

Watch Video Solution

27. _____ is used to select the magnitude of current through a circuit.

Watch Video Solution

28. A voltmeter is used to measure the _____.

Watch Video Solution

29. Electric charges flows from a _____ electric potential to a _____ electric potential.

View Text Solution

30. The SI unit of _____ is ampere.

Watch Video Solution

31. The motion of electric charges is called _____

Watch Video Solution

32. Electric current flows from the _____ terminal of the battery to the _____ terminal through a wire.

View Text Solution

33. _____ comprises a battery, an electric bulb and a switch.

Watch Video Solution

34. _____ is used to fix the magnitude of current through a circuit.

Watch Video Solution

35. _____ is used to provide protection to the electrical components.

View Text Solution

36. _____ serves as a reference point to measure the electric potential.

View Text Solution

37. An _____ is a closed conducting loop or path, which has a network of electrical components through which electrons are able to flow.

View Text Solution

38. The direction of current is taken opposite to the direction of flow of_____.

View Text Solution

39. Electric current passes in a circuit from the _____ to _____ terminal.

View Text Solution

40. A difference in electric potential is needed for the flow of electric charges in a _____.

View Text Solution

41. _____ gives the relation between the potential difference and current.

Watch Video Solution

42. _____ is the property to oppose the flow of charges.

Watch Video Solution

43. SI unit of resistance is

Watch Video Solution

44. The reciprocal of conductivity is _____

Watch Video Solution

45. The unit of conductance is _____.

Watch Video Solution

46. Conductance is expressed in terms of :_____

Watch Video Solution

47. The unit of conductivity is _____

Watch Video Solution

48. The resistance of a conductor is inversely proportional to its_____.

Watch Video Solution

49. _____ is a conductor with highest resistivity.

Watch Video Solution

50. Nichrome wire is used as the heating element because it has

Watch Video Solution

51. _____ of a material is the property of material to aid the flow of charges and hence, the passage of current in it.

Watch Video Solution

52. The reciprocal of electrical resistivity of a material is called its _____.

Watch Video Solution

53. Conductivity is _____ for conductors than insulators.

Watch Video Solution

54. _____ is less for conductors.

Watch Video Solution

55. The resistivity of copper is _____.

View Text Solution

56. The resistivity of nickel is _____.

View Text Solution

57. The resistivity of chromium is_____.

View Text Solution

58. The resistivity of glass is _____.

View Text Solution

59. The resistivity of rubber is _____.

View Text Solution

60. A circuit with the combination of resistors is known as _____.

Watch Video Solution

61. _____ are commonly used in flashlights.

Watch Video Solution

62. A _____ circuit has two or more loops through which current can pass.

Watch Video Solution

63. The equivalent resistance of a _____ circuit, the others do not work.

View Text Solution

64. If one appliance is disconnected in a _____ circuit , the others do not work.

Watch Video Solution

65. If one appliance is disconnected in a _____ circuit, others work independentely.

Watch Video Solution

66. The wiring in a house consists of _____ circuit.

Watch Video Solution

67. Parallel resistors connected in series form a _____ circuit.

Watch Video Solution

68. Series resistors connected in series from a _____ circuit.

View Text Solution

69. The rate of flow of charges in a conductor is _____.

Watch Video Solution

70. _____ is a closed conducting path of current.

View Text Solution

71. The device used to measure electric current is _____.

Watch Video Solution

72. Can a galvanometer be used for measuring the current? Explain.

Watch Video Solution

73. A _____ is used to measure the potential difference.

Watch Video Solution

74. The current flowing through the conductor is _____.

Watch Video Solution

75. _____ is used to select the magnitude of the current through the circuit.

View Text Solution

76. By convention, the direction of current is opposite to the direction of _____.

View Text Solution

77. The equivalent resistance in a _____ combination is less than the lowest of the individual resistances.

Watch Video Solution

78. Nichrome is an alloy of _____ and Chromium.

Watch Video Solution

79. Electric bulb is made up a small wire called the _____.

Watch Video Solution

80. The melting point of the filament in an electric bulb is _____.

Watch Video Solution

81. Electrical energy can develop _____ across a resistor.

View Text Solution

82. The passage of electric current through a wire, results in the production of

Watch Video Solution

83. The heating effect of _____ is used in home appliances like electric heater, electric iron etc.

Watch Video Solution

84. Heat produced in any resistor is directly proportional to the square of the _____ passing through the resistor.

Watch Video Solution

85. Heat produced in any resistor is directly proportional to the resistance of the _____.

View Text Solution

86. Conductivity is more for _____.

Watch Video Solution

87. Conductance "G" of a conductor is _____.

Watch Video Solution

88. _____ has a very high melting point.

Watch Video Solution

89. Electric power=_____.

Watch Video Solution

90. Electric power=_____.

Watch Video Solution

91. Nichrome has resisitivity equal to _____.

Watch Video Solution

92. Horse power = _____.

Watch Video Solution

93. The larger unit of power is _____.

Watch Video Solution

94. 1kWh = _____

Watch Video Solution

95. Expansion of MCB is _____.

Watch Video Solution

96. In domestic circuits, a third wire called the _____ having a Green insulation.

Watch Video Solution

97. When a live wire comes in contact with a neutral wire, it causes a _____.

Watch Video Solution

98. LED bulbs is a _____ device.

Watch Video Solution

99. _____ is less for conductors.

Watch Video Solution

100. Net effective resistance in series is given by _____.

Watch Video Solution

101. Joule law of heating is _____.

Watch Video Solution

102. Nichrome is an alloy of _____ and Chromium.

Watch Video Solution

103. When large current passes through the circuit, the fuse wire melts due to _____.

Watch Video Solution

104. Fuse wire has _____.

Watch Video Solution

105. The _____ is connected in series in an electric circuit.

Watch Video Solution

106. The fuse wire made up of a material whose _____ is relatively low.

Watch Video Solution

107. When large current passes through the circuit, the fuse wire melts due to _____.

Watch Video Solution

108. The fuse wire made up of a material whose _____ is relatively low.

Watch Video Solution

109. The horse power (hp) is a unit in the _____.

Watch Video Solution

110. When current passes through this wire, _____ is produced in the filament.

Watch Video Solution

111. _____ is the material used to make the filament in bulbs.

Watch Video Solution

112. _____ is defined as the rate of doing work or rate of spending energy.

Watch Video Solution

113. _____ is defined as the rate of consumption of electrical energy.

Watch Video Solution

114. The power of an electric device is a product of _____ and _____.

Watch Video Solution

115. Consumption of electrical energy is measured and expressed in _____.

Watch Video Solution

116. The SI unit of electrical energy is _____.

Watch Video Solution

117. Kilowatt hour is the unit of

Watch Video Solution

118. Which unit is used to measure electrical energy ? (or) Define kilo watt hour.

Watch Video Solution

119. The _____ in a domestic electric circuit is called Live wire.

Watch Video Solution

120. The _____ wire in a domestic circuit is neutral wire.

Watch Video Solution

121. The electricity supplied to our house has an electric potential of _____V.

Watch Video Solution

122. Each appliance gets an equal voltage in a _____ circuit.

Watch Video Solution

123. The wiring in a house consists of _____ circuit.

Watch Video Solution

124. With the help of the chemical compounds like _____ and _____, the manufacturer can produce LED bulbs that radiate Red, Green , Yellow and Orange colours.

View Text Solution

125. _____ Bulbs are used in traffic signals.

Watch Video Solution

126. When a live wire comes in contact with a neutral wire, it causes a _____.

Watch Video Solution

127. The _____ wire serves as a protective conductor , which saves us from electric shocks.

Watch Video Solution

128. In a conductor, the charges will flow from _____ electric potential to _____ electric potential.

View Text Solution

129. The relation between current and potential difference is given by

Watch Video Solution

130. The formula for Ohm's law is _____.

Watch Video Solution

131. _____ is the property to oppose the flow of charges.

Watch Video Solution

132. Resistance is _____ for different materials.

Watch Video Solution

133. _____ gives the relation between the potential difference and current.

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134. _____ is otherwise known as specific resistance.

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135. _____ of a conductor is a measure of resisting power of a specific material.

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Additional Questions Answers State Whether The Following Statements Are True Or False Correct The Statement If It False

1. Resistance of the wire is inversely proportional to length of the wire.

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2. A thin wire has less resistance than the thick wire of same length and same material

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3. What connection is used in domestic appliances and why ?

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4. Conductance is the property of the material to oppose the flow of charges

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5. The unit of electric potential is ohm

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6. One micro ampere is equal to $10^{-3}A$.

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7. The potential difference required for the flow of charges is provided by the voltmeter.

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8. Nichrome is an alloy of lead and chromium.

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9. George Simon Ohm invented electrochemical cell

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10. Telsa invented lightning conductor.

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Additional Questions Answers Match The Following

1. 

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2. 

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3. 

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4. 

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5. 

View Text Solution

6. 

View Text Solution

7. 

View Text Solution

8. 

View Text Solution

9. 

View Text Solution

10. 

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Additional Questions Answres Assertion And Reason

1. Assertion: The kinetic energy of the electrons increases when temperature of the wire increases.

Reason: An increasing temeperature conductivity of metallic wird decreases.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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2. Assertion: In a simple battery circuit the point of highest potential is positive terminal of the battery.

Reason: The current flows towars the point of the highest potential.

A. if both the assertion and the reason are true and the reason is the correct

explanation of the assertion.

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

3. Assertion: Bending a wire does not affect electrical resistance.

Reason: resistance of wire is proportional to resistivity of material.

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

B. if both the assertion and the reason are true , but the reason is not the correct

explanation of the assertion.

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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4. Asserion: Current is a scalar quantity.

Reason: Current is due to continuous flow of charges.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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5. Assertion: Ammeter is always connected in series whereas a voltmeter is connected in parallel.

Reason: An ammeter has a low resistance while voltmeter has high resistance.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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6. Assertion: When a wire is not connected to battery, no current flows.

Reason: Charge does not flow in particular direction.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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7. Assertion: A voltmeter must be connected in parallel and should have a high resistance.

Reason: The introduction of the voltmeter in the circuit must not affect the potential difference.

A. if both the assertion and the reason are true and the reason is the correct

explanation of the assertion.

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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8. Asserion: In parallel combination of electrical appliances, the total power consumption is equal to the sum of powers of the individual appliances.

Reason: Charges move from higher potential to lower potential.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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9. Assertion: In a series combination of electric bulbs, the bulb of 30 watts emits more light than that of lower bulbs.

Reason: The 30W bulb in series gets more current than low power bulbs.

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

B. if both the assertion and the reason are true , but the reason is not the correct

explanation of the assertion.

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

10. Assertion: Two resistors connected in series, the total resistance is greater than the highest of the individual resistance.

Reason: In series connection current in each resistor is same.

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

B. if both the assertion and the reason are true , but the reason is not the correct

explanation of the assertion.

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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11. Assertion: LED bulb is a semi-conductor device that emits visible light when an electric current passes through it.

Reason: LED television is one of the most important applications of light emitting diodes.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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12. Assertion: The effective resistance in a parallel combination is less than the series.

Reason: The potential difference across each resistance is same.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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13. Assertion: In series, one appliance is disconnected others also do not work.

Reason: Current cannot pass in this case.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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14. Assertion: Overloading happens when a large no. of appliances are connected in series. Reason: All the electric points are connected in parallel in the domestic circuit.

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

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

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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15. Assertion: When a large current passes through the circuit, the fuse wire melts due to Joules heating effect.

Reason: Fuse wire has low melting point and high resistance.

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

B. if both the assertion and the reason are true , but the reason is not the correct

explanation of the assertion.

C. if the assertion is true, but Reason is false.

D. if assertion is false, but the reason is true.

Answer:

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Additional Questions Answres Use The Analogy To Fill In The Blank

1. AC: reverses direction :: DC : _____.

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2. Conductivity : degree of conductance :: _____ : measure of resisting power.

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3. The unit of conductivity is _____

Watch Video Solution

4. Less resistivity : Conductor :: High resistivity:

_____

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5. $R_P : \frac{\mathrm{R}}{n} : R_s$:_____

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6. series: high resistance : parallel : _____

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7. _____ is the material used to make the filament in bulbs.

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8. Electric power: hp :: Electric energy :_____

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9. Overloading : excess current :: _____:contact of wires.

Watch Video Solution

10. MCB : _____ : earthing :: connecting to ground

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11. Electric oven : Nichrome :: bulb : _____.

View Text Solution

12. Ammeter : series :: voltmeter : _____.

Watch Video Solution

13. Resistor : fix the magnitude or current : _____ : select the magnitude of current.

View Text Solution

14. Voltmeter : potential difference :: _____ : direction of current.

View Text Solution

15. Series connection of resistanc : effective resistance is more :: Parallel connection of resistance : _____

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16. Ohm's law : resistance :: Joule's law : _____

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17.  : Resistor ::  : _____.

View Text Solution

18. Ampere : electric current :: _____ : volt

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19. Heating element : _____ : Fuse wire : lead and tin.

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20. VI : P :: V: _____

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21. Voltage $\times$ charge : _____::Current $\times$ time: charge

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22. Electric current :ampere ::electrical potential:_____

Watch Video Solution

23. Less resistivity : Conductor :: High resistivity: _____

Watch Video Solution

24. Fuse wire : Low melting point :: Tungsten : _____

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Additional Questions Answres Arrange The Following In A Correct Order

1. Arrange the words in a correct order of functioning.

Load(bulb) , Wire , and battery , Voltage

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2. Arrange the materials according to their resistivity.

Chromium, Copper , Nickel, Glass

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Additional Questions Answres Answer In One Word

1. What is electricity ?

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2. How many electrons are in 1C of charge ?

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3. Which material has high Resistivity ?

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4. The larger unit of power is _____.

Watch Video Solution

5. Define electric energy its commerical units.

Watch Video Solution

6. What is the abbreviations for LED, & LCD ?

Watch Video Solution

7. What is Seven Segment Display ?

Watch Video Solution

8. Horse power = _____.

Watch Video Solution

9. What is one unit ?

Watch Video Solution

10. The number of electrons in one coulomb of charge is_____.

Watch Video Solution

11. Give the charge of an electron.

Watch Video Solution

12. Full form of 'CNS'

Watch Video Solution

13. What does AC and DC mean ?

Watch Video Solution

14. What is lightning ?

Watch Video Solution

15. What are the advantages of LED TV over the normal TV ?

Watch Video Solution

16. Is LED bulb harmful to the environment ?

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Additional Questions Answres Very Short Answers

1. What is electric circuit ?

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2. What is the difference between open & closed circuit ? Draw daigrams for both.

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3. What is the direction of current ?

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4. What is the use of Ground connection ?

Watch Video Solution

5. Write the definition of volt.

Watch Video Solution

6. Draw a V- I graph.

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7. Define resistance.

 Watch Video Solution

8. SI unit of resistance is

 Watch Video Solution

9. Electric power=_____.

 Watch Video Solution

10. The SI of electric power is _____.

Watch Video Solution

11. What are two factors the consmption of electricity/ electrical energy based on ?

Watch Video Solution

12. What is the larger unit of electrical energy ? Represent it in terms of the larger unit.

Watch Video Solution

13. What is lightning ?

Watch Video Solution

14. LED stands for_____.

Watch Video Solution

15. Write the uses of LEDs.

Watch Video Solution

16. What is Seven Segment Display ?

Watch Video Solution

17. What is meant by Heating effect of electric current ?

Watch Video Solution

18. Fuse wire

Watch Video Solution

19. What happen to the other bulbs in a series circuit if one bulb stops functioning?

Watch Video Solution

20. What is the difference between open & closed circuit ? Draw daigrams for both.

Watch Video Solution

21. Why are copper wires used as connecting wires ?

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22. Write the difference between ammeter and voltmeter.

Watch Video Solution

23. Write the difference between conductor and insulator.

Watch Video Solution

24. Out of 100W and 40W bulbs, which has high electrical resistance when it use.

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25. Draw a closed circuit diagram consisting of resistor, ammeter, voltmeter,cell and a point key.

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26. Should the resistance of an ammeter be low or high ? Give reason.

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Additional Questions Answres Short Answers

1. Why the resistance of the conductor increases with rise in temperature.

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2. What happens to resistance of the conductor when length is doubled

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3. What happens to resistance of the conductor when area of cross section increases

Watch Video Solution

4. Write the difference between electric energy and electric power.

Watch Video Solution

5. Write electrical use of the components in electrical circuit. Resistor,Rheostat,Ammeter and Voltmeter

Watch Video Solution

6. Define parallel & series connection.

Watch Video Solution

7. Find the total resistance of parallel connection of series resistors.

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8. Joule law of heating is _____.

Watch Video Solution

9. How does a parallel circuit differ from a series circuit?

Watch Video Solution

10. Write about LED television.

Watch Video Solution

11. Expansion of MCB is _____.

Watch Video Solution

12. Does the current in the circuit change when the length or area of cross section or the material of the conductor is changed ?

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13. What is meant by overloading and short circuit ?

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14. How to reduce damages due to lightning ?

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Additional Questions Answres Long Answers

1. Water boils in an electric kettle in 15 mins, after switching on. If the length of the heating wire is decreased to $\frac{1}{3}$ of its initial value ,then in how much time will the same amount of water boil with the same supplyvoltage ?

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2. Find the effective resistance of series connection of parallel resistors.

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3. Write any five electrical components used in electrical circuit and draw its symbol.

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Additional Questions Answres Numerical Problems

1. 100 W bulb draws 680 mA current. How much time will be required to pass 30 C of charge through the bulb ?

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2. A current of 6A flows through metal wire. How many coulombs of charge pass through the wire in 2 minutes ?

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3. The amount of work done to move 20C charge from one point to another is 220 J. What is the potential difference between these two points ?

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4. The potential difference between two conductor is 110 V. How much work in moving

5 C charge from one conductor to the other ?

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5. An electric heater works for 30 min at 120V and takes energy of 1.2 kWh. What is the current drawn by the heater ?

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6. What is the resistance of heating element of the heater when 20 A current passing through

it at a potential of 220 V ?

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7. A 110 V light bulb takes 0.9 A current and operates 12h/day. Determine the energy consumed by the bulb for 30 days.

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8. Calculate the energy consumed by 120 W toaster in 20 min.

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Additional Questions Answres Higher Order Thinkng Skills Hots

1. Which options show the correct direction of current ?

A. 

B. 

C. 

D. 

Answer:

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2. Choose the correct statement.

A. A switch is the source of electric current in a circuit.

B. A switch help to complete or break the circuit.

C. A switch help us to use electricity as per requirement.

D. When the switch is open there is an air gap between the terminals.

Answer: B

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3. In the following arrangement, the bulb will glow if the ends A & B are connected with

A. steel spoon

B. metal clip

C. plastic clip

D. copper wire

Answer: C

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4. The electrical resistivity of few materials is given below ohm-meter.

Which of these materials can be used for making elements of heating device ?

View Text Solution

5. Electrical resistivities of some substances at $20^{\circ} C$ are given below:

Answer the following questions in relation to them:

(i) Among silver and copper , which one is a better conductor ? Why ?

(ii) Which material would you advice to be used in electrical heating devices ? Why ?

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6. The following table gives the resistivity of three samples :

Which of them is suitable for heating elements of electrical appliances and why ?

View Text Solution

7. Two electric current I and II are shown in figure.

Which of the two circuits has more resistance ?

View Text Solution

8. Two electric current I and II are shown in figure.

Through which circuit, more current passes ?

View Text Solution

9. Two electric current I and II are shown in figure. 

In which circuit, the potential difference across each resistor is equal.

View Text Solution

10. Following table gives the resistivity of three samples in (Ω m)

Which of them is a good conductor ? And which of them is an insulation ? Explain why ?

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11. The electric power consumed by a device may be calculated by using either of the two expressions : $P = I^2 R \text{or} P = V^2 / R$. The

first expression indicates that the power is directly proportional to R, whereas the second expression indicates inverse proportionally. How can the seemingly different dependence of P or R in these expression be explained ?

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12. The resistivities of some substances are given below :

(i) Which material is best for making connecting cords ?

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13. The resistivities of some substances are given below :

Which material do you suggest to be used in heater elements ?

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14. The resistivities of some substances are given below :

You have two wires of same length and same thickness. One is made of material A and other of material D. If the resistancce wire made of A is 2Ω, what is the resistance of the other wire ?

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Additional Questions Answres Value Based Question

1. Kalaivani was watching at a metal pipe, one end of which is connected to a tank at the top of her building and the other end to the tap, which is near the ground level. She was admiring how the water flows from top to the bottom through the pipe. She went and asked her mother, who was an engineer.

(i) Also Kalaivani asked her mother that can she able to compare this with any other

scientific concepts ?

(ii) How would her mother have compared the resistance in a water pipe as well as in a conductor.

(iii) Give the expression for resistors connected in series and parallel.

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