

**OHM'S LAW - EXPERIMENT - RESISTANCE**

This page contains CCE model questions – Concept wise.

Now we know the formation of different varieties of questions from Ohm's law – Experiment .

1. State Ohm's law.
2. How can you prove ohm's law ? Explain the procedure to be followed.
3. Jyothi Lakshmi wants to verify Ohm's law experimentally. Suggest the material needed to him to do the related activity.
4. What precautions should be taken to do Ohm's law experiment ?
5. In an electric circuit Battery, Plug key, Ammeter, Iron nail are connected in Series combination. Volt meter is connected at the ends of the iron nail in parallel combination. Draw a neat diagram for this situation.
6. Name any two substances that they can give the  $\frac{V}{I}$  ratio constant while doing Electricity experiments.
7. How can you prove that  $V \propto I$  for an electric conductor ?
8. Write the formula for Ohm's law. Name the terms in it.
9. Write the formula for Ohm's law. Explain the terms in it.
10. Draw a neat graph that shows the relation between V (Potential difference) and I (Electric current) for Ohmic conductors.
11. Draw a neat graph that shows the relation between V (Potential difference) and I (Electric current) for non Ohmic conductors.
12. Classify the following substances as Ohmic and Non ohmic conductors.  
Iron nail                  Mercury          LED                  Salt solution  
Semi conductor          Copper wire      Sodium gas      Magnesium ribbon
13. How can we classify the electric conductors as per Ohm's law ? Name them.  
Give two examples for each.
14. Do all materials follows Ohm's law ? Name any four substances that follow Ohm's law.
15. Do all materials follows Ohm's law ? Name any four substances that do not follow Ohm's law.
16. Naga Prakash is doing an electricity experiment with Aluminium string. He wants to verify the relation between V (Potential difference) and I (Electric current). Suggest a procedure to him to do that activity.
17. Write the full form of L.E.D.
18. Who stated Ohm's law ?
19. How can you perform an experiment to prove that "Flow of current (I) increases with increase of Potential difference (V)." ?
20. How can you perform an experiment to prove that "The ratio of Potential difference and Flow of current is constant." ?
21. Define resistance. What factors affect resistance of a conductor ?
22. Write the differences between resistance and resistor.
23. Write the use of Ohm's law in our daily life.
24. Do all substances has same resistance?
25. How can the resistance of a conductor change with temperature?

26. Units of resistance

[     ]

- A) Volt                      B) Ampere                      C) Ohm                      D) Culomb

27. Purnima had performed an experiment with Aluminium wire. The experiment readings are given in the following table.

Sl. No.	V (Potential difference)	I (Flow of current)
1	1.5 Volts	2 A
2	3.0	4 A
3	4.5	6 A
4	6.0	8 A

What relation do you find between the values of V and I ?

28. Ravi Sekhar had performed an experiment with two substances "X" and "Y". The experiment readings are given in the following table.

Sl. No.	Material	V (Potential difference)	I (Flow of current)
1	X	1.5 Volts	2 A
2	X	3.0	4 A
3	X	4.5	6 A
4	Y	1.5 Volts	3 A
5	Y	3.0	8 A
6	Y	4.5	12 A

Which is Ohmic Conductor ? X or Y ? How can you tell ?

29. How can you perform an experiment to prove that "Flow of current (I) decreases with decrease of Potential difference (V)." ?

30. Shahina had performed an experiment with Iron wire. The experiment readings are given in the following table. This experiment relates to Ohm's law.

Sl. No.	V (Potential difference)	I (Flow of current)
1	1.5 Volts	2 A
2	3.0	<b>X</b>
3	<b>Y</b>	6 A
4	6.0	8 A

Answer the following questions.

(i) Write the formula for Ohm's law.

(ii) Find the values of X and Y ?

31. Materials :

- i) Solid metals
- ii) Liquid salt solutions
- iii) L.E.D
- iv) Semi conductors

Which of the above follow Ohm's law at constant temperature ?

[     ]

- A) (i) only                      B) (i), (ii) and (iii)  
C) (ii), (iii) and (iv)                      D) (i) and (ii)

32. 1.5 V Potential difference is applied to a conductor. The flow of current in the circuit is 4 A. Find the resistance of the conductor.

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33. Assertion (P) : For Metals  $\frac{V}{I} = \text{Constant}$

Reason (R) : Metals are Ohmic conductors.

Then identify the correct one :

[     ]

- A) P is true and R is true. R is not the correct explanation for P
- B) P is true and R is true. R is the correct explanation for P
- C) P is false and R is true. R is the correct explanation for P
- D) P is true and R is false.

34. Observe the following statements :

- (i) If temperature increases the resistance of the conductor increases.
- (ii) L.E.D. is an example for Ohmic conductor.

Then identify the correct choice .

[     ]

- A) (i) and (ii) both are true
- B) (i) and (ii) both are false
- C) (i) is true and (ii) is false
- D) (i) is false and (ii) is true

35. Formula :

- (i)  $\frac{V}{I} = \text{Constant}$
- (ii)  $V = I R$
- (iii)  $V \propto I$

Which of the equation represents Ohm's law ?

[     ]

- A) (i) and (ii) only
- B) (i), (ii) and (iii)
- C) (ii) and (iii)
- D) only (i)



36. Match the following.

Set-I

- (i) Voltage
- (ii) Flow of current
- (iii) Resistance

Set-II

- (a) Ohm
- (b) Ampere
- (c) Volts

Choose the correct answer :

[     ]

- A) (i)-a, (ii)-b, (iii)-c
- B) (i)-c, (ii)-b, (iii)-a
- C) (i)-a, (ii)-c, (iii)-b
- D) (i)-c, (ii)-a, (iii)-b

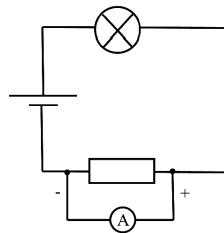
37. If the resistance of your body is  $100000 \Omega$  . What would be the current that flows in your body when you touch the terminals of 12 V battery ?

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38. The current in the wire depends

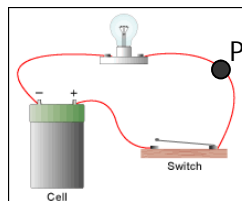
- A) Only on the potential difference applied
- B) Only on the resistance of the wire
- C) on both of them
- D) None of them

39. Observe the given diagram. Identify the wrongly connected apparatus.  
Adjust it and re draw the diagram.



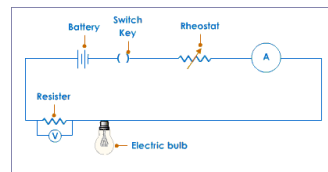
40. Observe the given circuit. There is an apparatus “P” in the circuit. Identify “P”. What is it ?

- A) Volt meter
- B) Ammeter
- C) Either Volt meter or Ammeter
- D) None of the above



41. Observe the given diagram. Murali connected the apparatus as shown in the diagram to perform Ohm’s law experiment.

- (i) Explain the apparatus used in the formation of this circuit.
- (ii) Which are in series ?
- (iii) Which are in Parallel ?



**Academic standards were not indicated.**

**This is to create awareness among children.**

**If they learn conceptually, they can easily write answers to any question.**

**If any one prepared this type of list, please send them to me.**

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