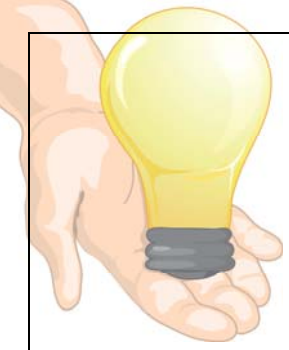

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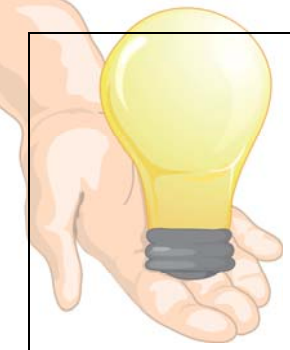
1. Define electric charge.	3. $F = kq_1q_2/r^2$; k = Coulomb's law constant (9×10^9); q_1, q_2= charge on bodies 1, 2 (Coulombs); r = distance between bodies (meters); F = force (Newtons).
2. Law of Electrostatic Interaction.	5. An instrument that determines the presence and sign of small electrical charges by the deflection of very thin metal leaves.
3. What is Coulomb's Law?	7. Current produced when electrons flow from a more negative terminal to a more positive one. A battery produces this type of electricity.
4. Find the force of repulsion between two charged spheres 1.0 meter apart with charges of 1.0 and 2.0 Coulombs respectively.	9. A line drawn so that a tangent to it at any point indicates the direction of an electric or magnetic field.
5. What is an Electroscope?	Even Answers
6. What is a battery?	2. Like charges repel, and unlike charges attract. (+ repels +)(- repels -)(+ attracts-).
7. Define direct current.	4.
8. Define electric field.	6. An instrument which produces energy from a chemical reaction.
9. Define Line of Force.	8. Exists wherever an electric force acts on an electric charge.
10. Define electric field intensity.	10. The force per unit positive charge placed at a particular point in an electric field. A vector quantity.

Odd Answers
1. There are two types of electric charge, positive (+) and negative (-).



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11. State the equation to calculate Electric Field Intensity.	11. = F/Q; E = electric field intensity; F = force exerted; Q = charge.
12. Define potential difference.	13. The potential difference or voltage produced by a battery or generator.
13. Define electromotive force (EMF).	15. The rate of flow of electric charge.
14. State the equation to calculate potential difference between two points.	17. 1 ampere = 1 coulomb/sec.
15. Define current.	19. It is measured in ohms.
16. In what unit is current measured?	12. The work per unit charge required to move an electric charge between two points. The voltage.
17. How is the ampere related to the coulomb?	14. V = M/Q; V = voltage in volts; Q = charge in Coulombs; W = work in joules.
18. Define resistance.	16. It is measured in amperes.
19. In what unit is resistance measured?	18. Opposition to the flow of electric charges. Electric energy is converted into heat because of this opposition.
20. How is the ohm related to the volt?	20. 1 ohm = 1 volt/ampere.

Odd Answers

Even Answers

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	Odd Answers
	21. V = IR; V = voltage in volts; I = current in amperes; R = resistance in ohms.
21. State Ohm's Law.	23. Where resistors are connected so that the current flows from the tip of one to the tail of another. The circuit is in the form of a single loop.
22. Define parallel circuit.	25. increase.
23. Define series circuit.	27. decrease.
24. State four factors affecting resistance in a wire and if their relationship to resistance is direct or inverse.	29. $I_{Total} = I_1 + I_2 + ...I_n$; I_{Total} = battery current; I_1, I_2, I_n are currents in different sections of the parallel circuit. Equation assumes two or more parallel paths.
25. Decreasing the cross section of a wire will _____ the resistance in the circuit.	Even Answers
26. Increasing the temperature in a wire will _____ the resistance in the circuit.	22. Where resistances in a circuit are connected independent of each other. The circuit is in the form of several loops.
27. Shortening the length will _____ the resistance in the circuit.	24. 1)temperature (direct)2)length (direct) 3) cross section (inverse) 4) type of material (depends on the material).
28. State the equation to calculate current in a series circuit (Ohm's Law applied).	26. increase.
29. State the equation to calculate current in a parallel circuit (Ohm's Law applied).	28. I Total = I1 = I2 = ...In ; I1, I2, In are currents in different sections of the circuit. Current is the same through all circuit elements.
30. State the equation to calculate resistance in a series circuit (Ohm's Law applied).	30. $R_{Total} = R_1 + R_2$; R_1 and R_2 are two resistors in series.

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	Odd Answers
	31. $1/R_{Total} = 1/R_1 + 1/R_2$; Where R_1 and R_2 are two resistors in parallel.
31. State the equation to calculate resistance in a parallel circuit (Ohm's Law applied).	33. $V_{Total} = V_1 = V_2$; V_1 and V_2 are voltages at different locations in the parallel circuit.
32. State the equation to calculate voltage in a series circuit (Ohm's Law applied).	35. A low resistance path between two points where there is normally a relatively high resistance. This results in excess current or overload.
33. the equation to calculate voltage in a parallel circuit (Ohm's Law applied).	37. The rate at which the circuit converts electrical potential energy into other forms of energy.
34. Define potential drop (IR or voltage drop).	39. $P = I^2R$; P = power (Watts); I = current (amperes); R = resistance (Ohms)
35. How does a short circuit take place?	Even Answers
36. State Joule's Law.	32. $= V_1 + V_2 + V_n$; V_1, V_2, V_n are voltages at different sections in the series circuit. The sum of the voltages across each resistor (or circuit element) equals the applied voltage.
37. Define power (in an electrical circuit).	34. The potential difference across a resistor.
38. What is the unit of power in an electrical circuit?	36. $H = I^2Rt$; H = heat in calories; R = resistance in ohms; t = time in seconds; I = current in amperes.
39. State the equation to calculate power in an electrical circuit.	38. measured in watts.
40. A 12 volt battery is connected to a 24 ohm resistance. What is the current following through the circuit?	40. $I = V/R = 12/24 = 0.5$ amp.

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41. A 12 volt battery is connected to a 24 ohm resistance. How much power is dissipated by the resistance?	43. $R_{Total} = R_1 + R_2$; 500 + 500 = 1000 ohms.
42. Two equal resistances of ½ ohm are connected in parallel. What is the effective resistance?	45.
43. Two 500 ohm resistors are connected in series. What is the effective resistance?	47.
44. 3 amps flow through a 1,000 ohm resistor. Calculate the power dissipated.	49.
45.	Even Answers
46.	42.
47.	44. $P = I^2R$; (3)(3)(1000) = 9,000 Watts.
48.	46.
49.	48.
50.	50.