**QUESTION 1**

1. In a circuit with multiple resistors connected in parallel, what happens to the total resistance as more resistors are added?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | It increases. |  |
|  |  | It decreases. |  |
|  |  | It stays the same. |  |
|  |  | It depends on the value of the resistors. |  |

**10 points**

**QUESTION 2**

1. What is the formula for calculating the total resistance of two resistors connected in series?

|  |  |  |
| --- | --- | --- |
|  |  | Rtotal = R1 + R2 |
|  |  | Rtotal = R1 \* R2 / (R1 + R2) |
|  |  | Rtotal = 1 / (R1 + R2) |
|  |  | Rtotal = R1 \* R2 |

**10 points**

**QUESTION 3**

1. What is the formula for calculating the total resistance of two resistors connected in parallel?

|  |  |  |
| --- | --- | --- |
|  |  | Rtotal = R1 + R2 |
|  |  | Rtotal = R1 \* R2 / (R1 + R2) |
|  |  | Rtotal = 1 / (R1 + R2) |
|  |  | Rtotal = R1 \* R2 |

**10 points**

**QUESTION 4**

1. In a series circuit which of the following is the same  throughout the circuit

|  |  |  |
| --- | --- | --- |
|  |  | Resistance |
|  |  | Voltage |
|  |  | Current |
|  |  | None of the above |

**10 points**

**QUESTION 5**

1. If three resistors with values of 10 ohms, 20 ohms, and 30 ohms are connected in parallel, what is the total resistance of the circuit?

|  |  |  |
| --- | --- | --- |
|  |  | 3.33 ohms |
|  |  | 5.45 ohms |
|  |  | 10 ohms |
|  |  | 20 ohms |

**10 points**

**QUESTION 6**

1. For the graph shown in the figure, what physical quantity does the slope of the graph represent for ohmic material?

|  |  |  |
| --- | --- | --- |
|  |  | power |
|  |  | resistivity |
|  |  | resistance |
|  |  | 1/resistance |

**10 points**

**QUESTION 7**

1. In a parallel circuit if one of the light bulbs burns out, the rest \_\_\_\_\_\_\_\_\_.

|  |  |  |
| --- | --- | --- |
|  |  | stop the flow of electricity |
|  |  | can still light up |
|  |  | will go out |
|  |  | of the light bulbs burn out also |

**10 points**

**QUESTION 8**

1. A series circuit has \_\_\_\_ path(s) that the electric current can take.

|  |  |  |
| --- | --- | --- |
|  |  | One |
|  |  | Two |
|  |  | Three |
|  |  | Four |

**10 points**

**QUESTION 9**

1. In a series circuit, which of the following is true?

|  |  |  |
| --- | --- | --- |
|  |  | The total resistance is equal to the sum of the individual resistances. |
|  |  | The total resistance is equal to the average of the individual resistances. |
|  |  | The total resistance is equal to the product of the individual resistances. |
|  |  | The total resistance is equal to the reciprocal of the individual resistances |

**10 points**

**QUESTION 10**

1. If two resistors of equal resistance are connected in parallel, what is the total resistance of the circuit?

|  |  |  |
| --- | --- | --- |
|  |  | Half the resistance of each individual resistor. |
|  |  | Twice the resistance of each individual resistor. |
|  |  | The same as the resistance of each individual resistor. |
|  |  | One-quarter the resistance of each individual resistor. |