**Science 9 Final Review**

**Modified True/False**

*Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.*

 1. In a *parallel* circuit, current goes through all of the devices in the circuit. *False – SERIES*

 2. A voltmeter is used to measure the amount of *resistance* measured across a resistor. *False – OHMMETER*

 3. The following image is the symbol for a *battery*. *FALSE - RESISTOR*



 4. The following image is the symbol for a *series battery of three cells*. *TRUE*



 5. The following image is the symbol for a *cell*. *FALSE - OPEN CIRCUIT*



 6. The following image is the symbol for a *switch*. *FALSE – LAMP/BULB*



**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

 7. When a charged acetate strip and a positively charged vinyl strip are brought together, they will OMIT

|  |  |
| --- | --- |
| a. | attract one another. |
| b. | repel one another. |
| c. | not affect one another. |
| d. | both become negatively charged. |

 8. A plastic ball hanging by a string is attracted to a positively charged plastic rod. What can you conclude about the ball?

|  |  |
| --- | --- |
| a. | It could be neutral or positively charged. |
| b. | It is definitely positively charged. |
| c. | It is definitely negatively charged. |
| d. | **It could be neutral or negatively charged.** |

 9. When an uncharged object loses electrons, it becomes

|  |  |  |  |
| --- | --- | --- | --- |
| a. | fully charged. | c. | neutral. |
| b. | negatively charged. | d. | **positively charged.** |

 10. Which of the following are among the laws of static electricity?

|  |  |
| --- | --- |
| I. | Similar charges attract. |
| II. | Similar charges repel. |
| III. | Opposite charges attract. |
| IV. | Opposite charges repel. |
| V. | Neutral objects are not attracted to charged objects. |
| VI. | Neutral objects are attracted to charged objects. |

|  |  |  |  |
| --- | --- | --- | --- |
| a. | I, IV, and VI | **c.** | **II, III, and V** |
| b. | I, IV, and VI | d. | II, III, and VI |

 11. Materials that allow charges to flow through them are called

|  |  |  |  |
| --- | --- | --- | --- |
| a. | unbalanced. | c. | insulators. |
| b. | **conductors.** | d. | balanced. |

 12. A neutral object has electrons added to it. This object is now

|  |  |  |  |
| --- | --- | --- | --- |
| a. | neutral.  | c. | uncharged.  |
| b. | positively charged.  | d. | **negatively charged.**  |

 13. Which of the following is an insulator?

|  |  |
| --- | --- |
| a. | aluminum |
| b. | copper |
| c. | **pure water** |
| d. | salt water |

 14. Plastic wrap becomes negatively charged when rubbed on fur. Which of the following is true?

|  |  |
| --- | --- |
| a. | **the plastic wrap gains electrons; the fur loses electrons** |
| b. | the plastic wrap loses electrons; the fur gains electrons |
| c. | the plastic wrap gains electrons and the fur gains electrons |
| d. | the plastic wrap loses electrons; the fur loses electrons |

 15. A series circuit has three 5  resistors. What is the total resistance of the circuit?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 0.2  | c. | **15**  |
| b. | 5  | d. | 45  |

The following diagram illustrates a circuit consisting of a battery, a switch, and a lamp.



 16. In the circuit illustrated above, what will happen to the lamp if a resistor is added to the circuit at point A?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | It will get brighter. | c. | It will go out. |
| b. | **It will get dimmer.** | d. | It will remain unchanged. |

 17. You add a second identical lamp to the circuit illustrated above by connecting it from point B to point C. Which of the following is true?

|  |  |
| --- | --- |
| a. | The two lamps are of equal brightness, but they are dimmer than the single lamp was. |
| b. | **The two lamps are of equal brightness, and are as bright as the single lamp was.** |
| c. | The new lamp is brighter than the original lamp. |
| d. | The original lamp is brighter than the new lamp. |

 18. The following circuit has three identical lamps connected in parallel.



When an electric current is passed through the circuit,

|  |  |
| --- | --- |
| a. | the lamp closest to the energy source will be the brightest. |
| b. | the lamp farthest from the energy source will be the brightest. |
| c. | the lamp in the middle will be the brightest. |
| d. | **the lamps will all have the same brightness.** |

 1~~9. If a family receives an electric bill of $122.00 for a month, and the power company charges 10 cents per kW•h, how much energy did the family use?~~

|  |  |  |  |
| --- | --- | --- | --- |
| ~~a.~~ | ~~122 kW•h~~ | ~~c.~~ | ~~12 200 kW•h~~ |
| ~~b.~~ | ~~1220 kW•h~~ | ~~d.~~ | ~~122 000 kW•h~~ |

 ~~20. A home theatre requires 10 A to operate. What is the power of the theatre when it is connected to a 120 V household circuit?~~

|  |  |  |  |
| --- | --- | --- | --- |
| ~~a.~~ | ~~12 W~~ | ~~c.~~ | ~~1200 W~~ |
| ~~b.~~ | ~~8300 W~~ | ~~d.~~ | ~~83 W~~ |

 ~~21. If a dishwasher uses 2 160 000 J of energy in 30 min, what is the power consumption of this appliance?~~

|  |  |  |  |
| --- | --- | --- | --- |
| ~~a.~~ | ~~1.2 W~~ | ~~c.~~ | ~~120 W~~ |
| ~~b.~~ | ~~12 W~~ | ~~d.~~ | ~~1200 W~~ |

 ~~22. If a dishwasher consumes 2400 W of power in 60 min, how much energy has been used by this appliance?~~

|  |  |  |  |
| --- | --- | --- | --- |
| ~~a.~~ | ~~144 000 J~~ | ~~c.~~ | ~~1 440 000 J~~ |
| b. | 864 000 J | d. | 8 640 000 J |

 23. On a home’s electricity meter, what is measured in kilowatt-hours?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | current | c. | resistance |
| b. | energy | d. | cost |

 24. Which of the following is used to measure electric potential difference?

|  |  |
| --- | --- |
| a. | Ohmmeter |
| b. | Ammeter |
| c. | energy meter |
| d. | **Voltmeter** |

 25. Which of the following is the most common material used in the wires of circuits?

|  |  |
| --- | --- |
| a. | **Copper** |
| b. | Aluminum |
| c. | Silicon |
| d. | Iron |

 26. Which of the following is a series battery of two cells? **A**

|  |  |
| --- | --- |
| a. |  |
| b. |  |
| c. |  |
| d. |  |

 27. What is the purpose of a parallel battery of several cells?

|  |  |
| --- | --- |
| a. | more voltage |
| b. | **more current** |
| c. | less current |
| d. | less voltage |

 28. What is current?

|  |  |
| --- | --- |
| a. | total energy contained in the battery |
| b. | amount of energy flowing in a circuit |
| c. | total amount of charge |
| d. | **amount of charges flowing past a point per second** |

 29. Which of the following shows resistors in series?A

|  |  |
| --- | --- |
| a. |  |
| b. |  |
| c. |  |
| d. |  |

 30. Which of the following is the equivalent of three 30  resistors in series?

|  |  |
| --- | --- |
| a. | **90**  |
| b. | 10  |
| c. | 30  |
| d. | 0.1  |

 31. Which of the following is the unit for measuring electric current?

|  |  |
| --- | --- |
| a. | **ampere** |
| b. | volt |
| c. | coulomb |
| d. | ohm |

 ~~32. Which of the following defines work?~~

|  |  |
| --- | --- |
| ~~a.~~ | ~~energy~~ |
| ~~b.~~ | ~~power~~ |
| ~~c.~~ | ~~effort~~ |
| ~~d.~~ | ~~change in energy~~ |