|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The mass of an object is

|  |  |  |
| --- | --- | --- |
|   | a.  | the force between the object and the earth. |
|   | b.  | a measure of the amount of matter in the object. |
|   | c.  | the amount of space the object occupies. |
|   | d.  | depends on the location of the object on the earth. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.2 - Define Matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. Any two objects are attracted to each other by \_\_\_\_\_.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | gravity | b.  | electrostatic forces |
|   | c.  | magnetism | d.  | all of them |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.2 - Define Matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. How is the weight of an object influenced when the gravitational force on the object is increased?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | it decreases | b.  | it increases |
|   | c.  | it is unchanged | d.  | it equals the mass |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.2 - Define Matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. The weight of an object is

|  |  |  |
| --- | --- | --- |
|   | a.  | a measure of the gravitational force pulling the object toward the earth. |
|   | b.  | equal to the mass of the matter in the object. |
|   | c.  | a measure of the space occupied by the object. |
|   | d.  | the same at any location on the earth. |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.2 - Define Matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. The fact that gold does not corrode is a \_\_\_\_\_\_ property

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | physical | b.  | personal | c.  | real | d.  | chemical |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.3 - Differentiate between physical and chemical properties of matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. Which of the following represents a physical change in matter?

|  |  |  |
| --- | --- | --- |
|   | a.  | A substance solidifies at 443 K. |
|   | b.  | A substance produces a gas and a solid when heated. |
|   | c.  | A substance burns when heated. |
|   | d.  | A substance changes color when exposed to air. |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.4 - Differentiate between physical and chemical changes in matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7. The melting of ice to liquid water is correctly classified as

|  |  |  |
| --- | --- | --- |
|   | a.  | a chemical change. |
|   | b.  | a physical change. |
|   | c.  | both a chemical and a physical change. |
|   | d.  | neither a chemical nor physical change. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.4 - Differentiate between physical and chemical changes in matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8. Which of the following is a physical property of matter?

|  |  |  |
| --- | --- | --- |
|   | a.  | it does not burn |
|   | b.  | produces a gas when placed in an acid |
|   | c.  | freezes at −10°F |
|   | d.  | the surface turns black in air |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.3 - Differentiate between physical and chemical properties of matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9. Which of the following is a chemical property of matter?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | color | b.  | density |
|   | c.  | freezing point | d.  | flammability |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.3 - Differentiate between physical and chemical properties of matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. As two clear liquid solutions are thoroughly mixed, a red solid forms. This change is most likely \_\_\_\_\_.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | physical. | b.  | chemical. |
|   | c.  | neither chemical nor physical. | d.  | both chemical and physical. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.4 - Differentiate between physical and chemical changes in matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11. The limit of chemical subdivision of an element is the \_\_\_\_\_.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | atom | b.  | molecule | c.  | proton | d.  | compound |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.2.1 - Describe Democritus' original idea of an atom. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12. Which of the following substances are composed of heteroatomic molecules?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | an iron nail | b.  | oxygen | c.  | copper wire | d.  | water |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13. A molecule represented by O-O-O must be classified as

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | homoatomic and polyatomic. | b.  | homoatomic and monoatomic. |
|   | c.  | heteroatomic and polyatomic. | d.  | heteroatomic and monoatomic. |

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| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14. Which of the following terms correctly applies to a molecule of CO2?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | triatomic, heteroatomic | b.  | polyatomic, diatomic |
|   | c.  | triatomic, homoatomic | d.  | diatomic, heteroatomic |

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| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15. Table salt, NaCl is best classified as a(n) \_\_\_\_\_ .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | compound | b.  | element |
|   | c.  | homogeneous mixture | d.  | heterogeneous mixture |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.5 - Classify matter as a compound, element, heterogenous mixture, or homogenous mixture. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16. The limit of physical subdivision of pure H2O is \_\_\_\_\_ .

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | the atom | b.  | the molecule | c.  | the element | d.  | a proton |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.2.2 - Explain Dalton's theory of the atom. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. Homoatomic pure substances are known as \_\_\_\_\_ .

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | protons | b.  | elements | c.  | compound | d.  | molecules |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.5 - Classify matter as a compound, element, heterogenous mixture, or homogenous mixture. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18. After heating, a pure substance, A, is found to produce both B and C. What can be said about the substance A?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | It is an element | b.  | It is a compound |
|   | c.  | It is either an element or compound | d.  | Impossible to predict |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.5 - Classify matter as a compound, element, heterogenous mixture, or homogenous mixture. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19. Two pure substances A and B react to form a new pure substance C. From this, we may conclude that

|  |  |  |
| --- | --- | --- |
|   | a.  | A and B are both elements |
|   | b.  | C is a compound, A and B may or may not be elements |
|   | c.  | C is an element, A and B are compounds |
|   | d.  | A, B, and C are all compounds |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.5 - Classify matter as a compound, element, heterogenous mixture, or homogenous mixture. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20. Which of the following is an example of a homogeneous mixture?

|  |  |  |
| --- | --- | --- |
|   | a.  | NaOH solution |
|   | b.  | mortar (mixture of water, sand and cement) |
|   | c.  | vinegar and oil salad dressing |
|   | d.  | more than one response is correct |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.3 - Differentiate between homogenous and heterogenous mixtures. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21. Which of the following consists of a single chemical species?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | solution | b.  | homogeneous mixture |
|   | c.  | heterogeneous mixture | d.  | compound |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.5 - Classify matter as a compound, element, heterogenous mixture, or homogenous mixture. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. Early measurements of length were based on

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | dimensions of astronomical bodies. | b.  | dimensions of the human body. |
|   | c.  | dimensions of bodies of water. | d.  | distances between cities. |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23. The metric system is a measurement system that is

|  |  |  |
| --- | --- | --- |
|   | a.  | the official system for all nations of the world. |
|   | b.  | only used by a few of the nations of the world. |
|   | c.  | commonly used by U.S. physical scientists. |
|   | d.  | used exclusively in chemical calculations. |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.1 - Differentiate between metric and English units. |
| *KEYWORDS:* | Chemistry |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24. The basic unit of length in the metric system is the \_\_\_\_\_ .

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | mil | b.  | millimeter | c.  | foot | d.  | meter |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25. Which of the following is an SI unit?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | gram | b.  | liter | c.  | meter | d.  | calorie |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 26. The prefix centi- denotes what fraction of a basic unit?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 1/10 | b.  | 1/100 | c.  | 1/1000 | d.  | 1000 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.2 - Identify appropriate metric prefixes. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 27. Which of the following is a derived unit of the S.I. system?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | kilogram | b.  | meter | c.  | liter | d.  | mole |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28. Convert a temperature of 76°F to a Celsius value.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 10 | b.  | 24 | c.  | 44 | d.  | 169 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.1 - Identify conversion factors. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 29. Which of the following numbers is correctly expressed using scientific notation?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 3489 | b.  | 5.248 × 104 | c.  | 45.78 × 106 | d.  | .0987 × 103 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.2 - Convert a number between standard and scientific notation. |
| *KEYWORDS:* | Chemistry |

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| 30. Do the following calculation and express the answer using correct scientific notation.  \_\_\_\_\_\_ = (2.97 × 102) × (6.09 × 10−7)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 5.53 × 103 | b.  | 1.81 × 10−4 | c.  | 4.88 × 108 | d.  | 2.05 × 10−9 |

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| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.3 - Perform math with numbers that are expressed in scientific notation. |
| *KEYWORDS:* | Chemistry |

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| 31. Do the following calculation, and express the answer using correct scientific notation.\_\_\_\_\_\_ = (6.00 × 1023) × (3.00) / (284)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 6.34 × 1021 | b.  | 1.58 × 10−22 | c.  | 6.34 × 10−2 | d.  | 15.8 |

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| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.3 - Perform math with numbers that are expressed in scientific notation. |
| *KEYWORDS:* | Chemistry |

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| 32. The number 0.00816 expressed correctly using scientific notation is \_\_\_\_\_ .

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 8.16 × 102 | b.  | 8.16 × 103 | c.  | 8.16 × 10−2 | d.  | 8.16 × 10−3 |

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| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.2 - Convert a number between standard and scientific notation. |
| *KEYWORDS:* | Chemistry |

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| 33. How many significant figures are justified in a measurement of a length that is between 9 and 10 centimeters if the measuring device (ruler) has smallest divisions of 0.1 cm?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | one | b.  | two | c.  | three | d.  | four |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.2 - Identify the number of significant digits in a numerical value. |
| *KEYWORDS:* | Chemistry |

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| 34. How many significant figures are used in expressing a measurement as 0.2503 L?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | one | b.  | two | c.  | three | d.  | four |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.2 - Identify the number of significant digits in a numerical value. |
| *KEYWORDS:* | Chemistry |

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| 35. Which number has the greatest number of significant digits?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 1.0035 | b.  | 17.5000 | c.  | 0.0000625 | d.  | 6.022 × 1023 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.2 - Identify the number of significant digits in a numerical value. |
| *KEYWORDS:* | Chemistry |

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| 36. Do the following calculation and express the answer using the correct number of significant figures.   \_\_\_\_\_\_ = (342) × (0.0012) ÷ 100.0

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 0.00410 | b.  | 0.0041 | c.  | 4.10 × 10−3 | d.  | 0.004104 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.4 - Explain the rules for carrying significant figures through multiplication, division, and exponentiation operations. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 37. Do the following calculation. How many significant figures are justified for the answer?  \_\_\_\_\_\_= 6.02 + 5.119 + 0.04218

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | three | b.  | four | c.  | five | d.  | seven |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.3 - Explain the rules for carrying significant figures through addition or subtraction operations. |
| *KEYWORDS:* | Chemistry |

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| 38. A furnace delivers 8.0 × 104 BTU per hour. How many kilocalories per hour is this?(hint: 1 cal = 0.00397 BTU)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | 3.2 × 10−5 kcal | b.  | 3.2 × 102 kcal |
|   | c.  | 2.0 × 104 kcal | d.  | 2.5 × 102 kcal |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 39. Which of the following set-ups will allow you to calculate the cost of fruit in dollars per gram, if the price is given as 0.79 dollars per pound?

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

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40. A mass 0.0040 kg is equal to \_\_\_ cg.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | 4.0 × 10-8 | b.  | 400 |
|   | c.  | 0.40 | d.  | 40 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.2 - Identify appropriate metric prefixes.GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 41. Suppose the speedometer in your car reads 55.0 mph. What is your speed in km/hr? (1 km = 0.621 mi.)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 34.1 | b.  | 0.029 | c.  | 88.6 | d.  | 0.011 |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 42. Knowing that 1 g = 0.035 oz and 16 ounces = 1 lb, calculate the number of grams in 10 pounds.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 35 | b.  | 0.56 | c.  | 1.8 | d.  | 4.6 × 103 |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 43. If a student completes 5 problems out of a total of 8 on a pop quiz, what percentage of the quiz was completed?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 0.625 | b.  | 6.25 | c.  | 16.0 | d.  | 62.5 |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44. If 13% of a class cheats on an exam and there are 93 students in the class, how many students should you recommend be expelled (to the nearest whole student)?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 9 | b.  | 10 | c.  | 12 | d.  | 15 |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 45. A hiker began a hike with a pint canteen full of water. One pint equals 16 fluid ounces. At the end of the hike, 7.0 fluid ounces of water remained. What percent of the water was *used* during the hike?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 78 | b.  | 44 | c.  | 56 | d.  | 13 |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 46. Eighteen students in a class will get this question correct. If that represents 45% of the class, how large is the class?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 20 | b.  | 40 | c.  | 60 | d.  | 100 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 47. If urine has a density of 1.08 g/mL, what would be the mass of a 125 mL urine sample?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 135 g | b.  | 0.00864 g | c.  | 116 g | d.  | 125 g |

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| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 48. You are able to carry a maximum of 20 kg. What is the maximum volume of gold that you can carry?  (Au has a density of 19.6 g/cm3)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 392 cm3 | b.  | 1.0 × 103 cm3 | c.  | 0.98 cm3 | d.  | none of these |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 49. The fact that iron (Fe) corrodes when exposed to water and air is a

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | physical property. | b.  | metal property. |
|   | c.  | chemical property. | d.  | real property. |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.3 - Differentiate between physical and chemical properties of matter. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50. Convert 30.0°C to Fahrenheit.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 112 | b.  | 86.0 | c.  | 48.7 | d.  | 34.4 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 51. Which of the following is not one of the five key body characteristics that provide a good assessment of a person's overall health?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | blood pressure | b.  | blood cholesterol |
|   | c.  | body fat | d.  | age |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 52. How can the volume of an irregular unknown object be measured?

|  |  |  |
| --- | --- | --- |
|   | a.  | using a ruler to measure length, width, and depth |
|   | b.  | measuring the volume of water displaced by the object |
|   | c.  | obtaining the mass of the object |
|   | d.  | measure the radius and use V=πr2 |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.3.1 - Calculate density given mass and volume. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 53. Do the following calculation and express the answer using the correct number of significant figures.\_\_\_\_\_\_ =   (1.21 × 10−3 + 1.3 × 10−3) × 6.453 × 102

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 1.619 | b.  | 2 | c.  | 1.6 | d.  | 1.62 |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.4 - Explain the rules for carrying significant figures through multiplication, division, and exponentiation operations. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 54. If a sample of blood was found to have a density of 1.05 g/mL, what would be the mass of 1.000 liters of this material? Express your answer with the proper number of significant figures.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 1.05 × 10−3 g | b.  | 1.05 × 103 g | c.  | 1050 g | d.  | 1.050 kg |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.2 - Convert a number between standard and scientific notation.GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 55. On a cold winter day the weather report gives the temperature as -5.0° F.  What would this temperature be if reported on the Kevin scale?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 252 K | b.  | 258 K | c.  | 268 K | d.  | -20.6 K |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 56. Express the following “generic” number in standard notation.    X.XX × 104

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 0.000XXX | b.  | XX,X00 | c.  | X,XX0 | d.  | 0.00XXX |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.2 - Convert a number between standard and scientific notation. |
| *KEYWORDS:* | Chemistry |

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| 57. Express the following “generic number” in scientific notation.  0.0000XXX

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | XXX × 10-7 | b.  | X.XX × 105 | c.  | X.XX × 10-5 | d.  | X.XX × 10-4 |

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| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.2.2 - Convert a number between standard and scientific notation. |
| *KEYWORDS:* | Chemistry |

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| 58. The density of zinc is 7.13 g/cm3.  What is the mass in kilograms of a 125 cm3 cylinder of zinc?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 891 kg | b.  | 17.5 kg | c.  | 0.0175 kg | d.  | 0.891 kg |

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| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 59. Ethanol (ethyl alcohol) has a density of 0.789 g/mL at 25°C.   If 75.5 g of ethanol is needed for a reaction, what volume in mL should be added to the reaction container?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 95.7 mL | b.  | 59.6 mL | c.  | 0.0105 mL | d.  | 78.9 mL |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 60. Based on data obtained in an experiment, to determine the density of a metal, the following calculation is carried out.  Express the answer to the correct number of significant figures.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 2.1 g/mL | b.  | 2.14 g/ml | c.  | 2.142 g/mL | d.  | 2.1423 g/mL |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.4 - Explain the rules for carrying significant figures through multiplication, division, and exponentiation operations. |
| *KEYWORDS:* | Chemistry |

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| 61. You are saving for a new $1226 (including taxes) laptop computer using earnings from your part-time job.  At that job, you work 20 hours/week, earning $10.25/hour take home pay.  If you can save 25% of all of your income, how many weeks will it take for you to save enough money?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 48 weeks | b.  | 24 weeks | c.  | 12 weeks | d.  | 6 weeks |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 62. It turns out that the dark side of the moon has as a mean temperature of -280 oF.  What would that the temperature be on the Kelvin scale?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | -553 K | b.  | -7 K | c.  | 100 K | d.  | 173 K |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 63. The figure shown below is an example of what type of molecule?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | homoatomic, triatomic | b.  | heteroatomic, polyatomic |
|   | c.  | homoatomic, polyatomic | d.  | heteroatomic, triatomic |

|  |  |
| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| 64. Which of the following properties is characteristic of a mixture?

|  |  |  |
| --- | --- | --- |
|   | a.  | constant composition |
|   | b.  | variation of physical properties |
|   | c.  | fixed melting point. |
|   | d.  | cannot be physically separated into simpler materials |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.3 - Differentiate between homogenous and heterogenous mixtures. |
| *KEYWORDS:* | Chemistry |

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| 65. The average gestation period (length of a pregnancy) for humans is 40 weeks.  If a child if born after just 36 weeks, what was the percentage of this gestation period compared to the normal length?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 4.0 % | b.  | 10 % | c.  | 28 % | d.  | 90 % |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 66. One system of rating food is to determine its energy density in kcal/g.  If your 200 g snack contains 100 g fat (900 cal/g) and  a total of 100 g of protein and carbohydrates (400 cal/gram).  What is its energy density?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | a.  | 1.3 kcal/g | b.  | 6.5 kcal/g | c.  | 9.0 kcal/g | d.  | 13 kcal/g |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 67. The number twelve, representing a dozen, has two significant figures.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.2 - Identify the number of significant digits in a numerical value. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 68. The number 6730.0 contains five significant figures.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.2 - Identify the number of significant digits in a numerical value. |
| *KEYWORDS:* | Chemistry |

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| 69. If 3333 is divided by 5.0, the answer should have two significant figures.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.4 - Explain the rules for carrying significant figures through multiplication, division, and exponentiation operations. |
| *KEYWORDS:* | Chemistry |

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| 70. If 6526 is added to 15.0, the answer should have two significant figures.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.3.3 - Explain the rules for carrying significant figures through addition or subtraction operations. |
| *KEYWORDS:* | Chemistry |

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| 71. To convert feet to inches, you should multiply by the factor 12 in./ft.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.1 - Identify conversion factors. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 72. To convert micrograms to grams, you should multiply by 1,000,000 g/microgram.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.2 - Identify appropriate metric prefixes. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 73. To convert microliters to liters, you should multiply by 1 liter/1,000,000 microliters.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.2 - Identify appropriate metric prefixes. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 74. If a 50 gram sample of iron alloy contains 40 grams if iron, it contains 80% iron by weight.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 75. If 100 people in a town of 5,000 people own a certain color car, this represents 0.1% of the population.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| 76. If a 200 gram sample of water is partially frozen forming 40 g of ice, than 80% of the original sample is still a liquid.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.2 - Solve one-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 77. A sample of urine is measured to have the density of 1.15 g/mL which is an indicator that there may be a medical problem.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO2.3.1 - Calculate density given mass and volume. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 78. A patient weights 220 lbs. A medication for this patient is supposed to be taken 3 mg per kg per day. The correct dose for this patient is 3000 mg per day.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.3 - Solve multi-step dimensional analysis problems. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 79. A particular medication is a heterogeneous mixture. Since heterogeneous mixtures are consistent throughout, this medication does not need to be shaken.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.3 - Differentiate between homogenous and heterogenous mixtures. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 80. A Celsius degree is the same size as a Kelvin degree.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 81. One advantage of the Kelvin system is that it is impossible to have temperatures below zero.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 82. Body density can be used to determine the amount of fat carried by an individual because the density of muscle is greater than that of fat.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO2.3.1 - Calculate density given mass and volume. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 83. A scientific model is an explanation for observed behavior.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.1.2 - Outline the steps of the scientific method. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 84. Molarity (*M*) is calculated as:  *.  M* would be considered a derived unit.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.5.1 - Identify conversion factors. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 85. A monoatomic molecule cannot be reduced to a simpler chemical.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 86. The yard is considered a derived SI unit.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 87. A patient with a body temperature of 300 K would be considered as suffering from hypothermia.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | True / False |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| 88. Identify a true statement of matter.

|  |  |  |
| --- | --- | --- |
|   | a.  | Matter is a measurement of gravitational force acting on an object. |
|   | b.  | Matter is anything that has mass and occupies space. |
|   | c.  | The amount of matter in an object varies in different locations. |
|   | d.  | Matter is a measurement of mass in an object. |

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| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO2.1.2 - Define Matter. |
| *KEYWORDS:* | Chemistry |

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| 89. Which of the following units of measure is a derived unit of measurement?

|  |  |  |
| --- | --- | --- |
|   | a.  | Length |
|   | b.  | Area |
|   | c.  | Mass |
|   | d.  | Time |

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| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO1.4.3 - Identify standard units of measurement for length, volume, mass, time, and temperature. |
| *KEYWORDS:* | Chemistry |

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| 90. Molecules that contain two or more kinds of atoms are \_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | Diatomic molecules |
|   | b.  | Homoatomic molecules |
|   | c.  | Heteroatomic molecule |
|   | d.  | Triatomic molecules |
|   | e.  | Polyatomic molecules |

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| --- | --- |
| *ANSWER:* | c |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| 91. Molecules that contain more than three atoms are \_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | Diatomic molecules |
|   | b.  | Homoatomic molecules |
|   | c.  | Heteroatomic molecule |
|   | d.  | Triatomic molecules |
|   | e.  | Polyatomic molecules |

|  |  |
| --- | --- |
| *ANSWER:* | e |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| 92. Molecules that contain two atoms are \_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | Diatomic molecules |
|   | b.  | Homoatomic molecules |
|   | c.  | Heteroatomic molecule |
|   | d.  | Triatomic molecules |
|   | e.  | Polyatomic molecules |

|  |  |
| --- | --- |
| *ANSWER:* | a |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 93. Molecules that contain three atoms are \_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | Diatomic molecules |
|   | b.  | Homoatomic molecules |
|   | c.  | Heteroatomic molecule |
|   | d.  | Triatomic molecules |
|   | e.  | Polyatomic molecules |

|  |  |
| --- | --- |
| *ANSWER:* | d |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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| 94. Molecules that contain only one kind of atom are \_\_\_.

|  |  |  |
| --- | --- | --- |
|   | a.  | Diatomic molecules |
|   | b.  | Homoatomic molecules |
|   | c.  | Heteroatomic molecule |
|   | d.  | Triatomic molecules |
|   | e.  | Polyatomic molecules |

|  |  |
| --- | --- |
| *ANSWER:* | b |
| *POINTS:* | 1 |
| *QUESTION TYPE:* | Multiple Choice |
| *LEARNING OBJECTIVES:* | GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements. |
| *KEYWORDS:* | Chemistry |

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