Chemistry for Today 10th edition Seager Test Bank

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Chapter 1 - Matter, Measurements, and Calculations

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

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

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

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

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

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LEARNING OBJECTIVES: GOBC LO2.1.3 - Differentiate between physical and chemical properties of matter.
KEYWORDS: Chemistry

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

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

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

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

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

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

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.

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

14. Which of the following terms correctly applies to a molecule of CO_2?
    a. triatomic, heteroatomic b. polyatomic, diatomic
    c. triatomic, homoatomic d. diatomic, heteroatomic

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

15. Table salt, NaCl is best classified as a(n) _____ .
    a. compound b. element

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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

16. The limit of physical subdivision of pure H_2O 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

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

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

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.

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KEYWORDS: Chemistry

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

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

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

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

24. The basic unit of length in the metric system is the _____ .

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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

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

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

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

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

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

a. 3489 b. 5.248×10^4 c. 45.78×10^6 d. $.0987 \times 10^3$

ANSWER: b

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

30. Do the following calculation and express the answer using correct scientific notation.
_____ = $(2.97 \times 10^{2}) \times (6.09 \times 10^{-7})$
a. 5.53×10^{3} b. 1.81×10^{-4} c. 4.88×10^{8} d. 2.05×10^{-9}
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

31. Do the following calculation, and express the answer using correct scientific notation.
_____ = $(6.00 \times 10^{23}) \times (3.00) / (284)$
a. 6.34×10^{21} b. 1.58×10^{-22} c. 6.34×10^{-2} d. 15.8
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

32. The number 0.00816 expressed correctly using scientific notation is _____ .
a. 8.16×10^{2} b. 8.16×10^{3} c. 8.16×10^{-2} d. 8.16×10^{-3}
ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
LEARNING OBJECTIVES: GOBC LO1.2.2 - Convert a number between standard and scientific notation.
KEYWORDS: Chemistry

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

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

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

35. Which number has the greatest number of significant digits?
a. 1.0035 b. 17.5000 c. 0.0000625 d. 6.022×10^{23}

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

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

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

38. A furnace delivers 8.0×10^4 BTU per hour. How many kilocalories per hour is this?
(hint: 1 cal = 0.00397 BTU)
a. 3.2×10^{-5} kcal b. 3.2×10^2 kcal
c. 2.0×10^4 kcal d. 2.5×10^2 kcal

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

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?

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a. $\frac{0.79\text{ dollars}}{1\text{ lb}} \times \frac{2.20\text{ lb}}{1000\text{ g}}$ b. $\frac{0.79\text{ dollars}}{1\text{ lb}} \times \frac{457\text{ g}}{1\text{ dollar}}$

c. $\frac{1\text{ lb}}{0.79\text{ dollars}} \times \frac{1\text{ lb}}{457\text{ g}}$ d. $\frac{1\text{ lb}}{0.79\text{ dollars}} \times \frac{1\text{ kg}}{2.20\text{ lb}}$

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

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

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

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. 4.6×10^{3}

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

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

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

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

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

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

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/cm^3)

a. 392 cm^3 b. 1.0×10^3 cm^3 c. 0.98 cm^3 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

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

a. physical property. b. metal property.

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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

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

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

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 $V=\pi r^2$

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

53. Do the following calculation and express the answer using the correct number of significant figures.

_____ = $(1.21 \times 10^{-3} + 1.3 \times 10^{-3}) \times 6.453 \times 10^{2}$

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

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multiplication, division, and exponentiation operations.
KEYWORDS: Chemistry

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. 1.05×10^{3} 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

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

56. Express the following "generic" number in standard notation. $X.XX \times 10^{4}$

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

57. Express the following "generic number" in scientific notation. 0.0000XXX

a. $XXX \times 10^{-7}$ b. $X.XX \times 10^{5}$ c. $X.XX \times 10^{-5}$ d. $X.XX \times 10^{-4}$

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

58. The density of zinc is 7.13 g/cm^3. What is the mass in kilograms of a 125 cm^3 cylinder of zinc?

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

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

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KEYWORDS: Chemistry

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

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.

$$\frac{57.675\ \text{g} - 3.047\ \text{g}}{25.65\ \text{mL} - 0.15\ \text{mL}} = 2.1422745098\ \text{g/mL}$$

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

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

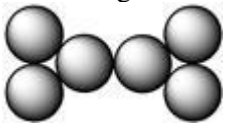
ANSWER: b
POINTS: 1
QUESTION TYPE: Multiple Choice
LEARNING OBJECTIVES: GOBC LO1.5.2 - Solve one-step dimensional analysis problems.
KEYWORDS: Chemistry

62. It turns out that the dark side of the moon has as a mean temperature of -280 ^{o}F. 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

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



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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

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

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

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

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

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

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

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

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

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LEARNING OBJECTIVES: GOBC LO1.4.2 - Identify appropriate metric prefixes.
KEYWORDS: Chemistry

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

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

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

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

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

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

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

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

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

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

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.

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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

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

84. Molarity (M) is calculated as: $M = \frac{\text{mol}}{\text{liters}}$. 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

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

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

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.

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

89. Which of the following units of measure is a derived unit of measurement?
    a. Length
    b. Area
    c. Mass
    d. Time

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

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

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

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

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

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

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

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