

Chemistry for Today 10th edition Seager Test Bank

SKU: 9780357453384-TEST-BANK

Chapter 1 - Matter, Measurements, and Calculations

1. The mass of an object is
- the force between the object and the earth.
 - a measure of the amount of matter in the object.
 - the amount of space the object occupies.
 - 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 ____.
- gravity
 - electrostatic forces
 - magnetism
 - 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?
- it decreases
 - it increases
 - it is unchanged
 - 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 measure of the gravitational force pulling the object toward the earth.
 - equal to the mass of the matter in the object.
 - a measure of the space occupied by the object.
 - 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
- physical
 - personal
 - real
 - chemical

ANSWER: d

POINTS: 1

QUESTION TYPE: Multiple Choice

Chapter 1 - Matter, Measurements, and Calculations

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

Chapter 1 - Matter, Measurements, and Calculations

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 CO₂?

- 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

Chapter 1 - Matter, Measurements, and Calculations

- 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 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

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.

Chapter 1 - Matter, Measurements, and Calculations

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 _____ .

Chapter 1 - Matter, Measurements, and Calculations

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

Chapter 1 - Matter, Measurements, and Calculations

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.

$$\underline{\hspace{2cm}} = (2.97 \times 10^2) \times (6.09 \times 10^{-7})$$

- 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.

$$\underline{\hspace{2cm}} = (6.00 \times 10^{23}) \times (3.00) / (284)$$

- 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

Chapter 1 - Matter, Measurements, and Calculations

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. _____ = $(342) \times (0.0012) \div 100.0$

- 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?

Chapter 1 - Matter, Measurements, and Calculations

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

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

Chapter 1 - Matter, Measurements, and Calculations

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/cm³)

- a. 392 cm³ b. 1.0×10^3 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

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

- a. physical property. b. metal property.

Chapter 1 - Matter, Measurements, and Calculations

- 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.

$$\underline{\hspace{1cm}} = (1.21 \times 10^{-3} + 1.3 \times 10^{-3}) \times 6.453 \times 10^2$$

- 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

Chapter 1 - Matter, Measurements, and Calculations

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 Kelvin 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.

Chapter 1 - Matter, Measurements, and Calculations

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 °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

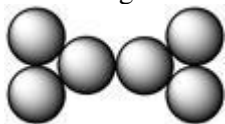
POINTS: 1

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?



Chapter 1 - Matter, Measurements, and Calculations

- 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 is 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

Chapter 1 - Matter, Measurements, and Calculations

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

Chapter 1 - Matter, Measurements, and Calculations

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 of 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, then 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

Chapter 1 - Matter, Measurements, and Calculations

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.

Chapter 1 - Matter, Measurements, and Calculations

- 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

Chapter 1 - Matter, Measurements, and Calculations

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

Chapter 1 - Matter, Measurements, and Calculations

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

Chapter 1 - Matter, Measurements, and Calculations

POINTS: 1

QUESTION TYPE: Multiple Choice

LEARNING OBJECTIVES: GOBC LO3.1.2 - Differentiate between compounds, molecules, and elements.

KEYWORDS: Chemistry