**Chapter 1 Test Bank**

**Keys to Studying Chemistry: Definitions, Units, and Problem Solving**

1. Which one of the following is a “substance” in the sense of the word as used in your textbook?

A. airB. tap waterC. sea water**D.** waterE. toothpaste*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Classification and States of MatterTopic: Study of Chemistry*2. Select the best statement.**A.** Physical changes may be reversed by changing the temperature.B. Physical changes alter the composition of the substances involved.C. Physical properties are not valid characteristics for identifying a substance.D. Physical properties are mostly extensive in nature.E. Physical changes are usually accompanied by chemical changes.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*3. Select the best statement.A. Chemical changes provide the only valid basis for identification of a substance.B. Chemical changes are easily reversed by altering the temperature of the system.**C.** Chemical changes always produce substances different from the starting materials.D. Chemical changes are associated primarily with extensive properties.E. Chemical changes are accompanied by changes in the total mass of the substances involved.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*4. Which of the following is a chemical change?A. boiling of waterB. melting wax**C.** broiling a steak on a grillD. condensing water vapor into rainfallE. carving a piece of wood*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*5. Water vapor is less dense than ice becauseA. molecules in the gas phase are in constant motion.B. molecules in the gas phase have more potential energy than in solids.C. molecules in the gas phase have more kinetic energy than in solids.D. gaseous molecules have less mass.**E.** molecules in the gas phase have more space between them than in solids.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Classification and States of MatterTopic: Study of Chemistry*6. During the swing of a frictionless pendulum, what energy form(s) remain constant?A. kinetic energy onlyB. potential energy onlyC. both kinetic energy and potential energy**D.** kinetic plus potential energyE. None of these choices are correct.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: HardGradable: automaticSubtopic: Classification and States of MatterTopic: Study of Chemistry*7. The most significant contribution to modern science made by alchemists wasA. their fundamental work in the transmutation of the elements.**B.** their widespread acceptance of observation and experimentation.C. their systematic method of naming substances.D. their understanding of the nature of chemical reactions.E. their discovery of phlogiston.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: MediumGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*8. Select the best statement about chemistry before 1800.A. Alchemy focused on objective experimentation rather than mystical explanations of processes.B. The phlogiston theory laid a valuable theoretical basis for modern chemistry.**C.** Lavoisier's quantitative work on the role of oxygen in combustion was the beginning of modern chemistry.D. The interpretation of data by alchemists was not biased by their overall view of life.E. Alchemists failed because they did not develop any practical chemical methods.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: MediumGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*9. Which of the following activities is not a part of good science?A. proposing a theoryB. developing a hypothesisC. making quantitative observationsD. designing experiments**E.** indulging in speculation*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*10. A scientist made careful measurements of the pressure and temperature of many different gases. Based on these measurements, he concluded that “the pressure of a fixed amount of gas, measured at constant volume, is directly proportional to its absolute temperature.” This statement is best described as aA. theory.B. hypothesis.**C.** law.D. experiment.E. definition.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*11. A dictionary has the following definition for a word: “A tentative explanation that accounts for a set of facts.” Which of the following words best fits that definition?A. theory**B.** hypothesisC. lawD. experimentE. definition*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*12. A detailed explanation of natural phenomena that is generally accepted and has been extensively tested is called a**A.** theory.B. hypothesis.C. law.D. fact.E. postulate.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*13. The distance between carbon atoms in ethylene is 134 picometers. Which of the following expresses that distance in meters?A. 1.34 × 10–13 mB. 1.34 × 10–12 m**C.** 1.34 × 10–10 mD. 1.34 × 10–7 mE. 1.34 × 10–6 m*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*14. The average distance from Earth to the Sun is 150 megameters. What is that distance in meters?**A.** 1.5 × 108 mB. 1.5 × 106 mC. 1.5 × 105 mD. 1.5 × 103 mE. 1.5 × 10–6 m*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*15. The mass of a sample is 550 milligrams. Which of the following expresses that mass in kilograms?A. 5.5 × 108 kgB. 5.5 × 105 kg**C.** 5.5 × 10–4 kgD. 5.5 × 10–6 kgE. 5.5 × 10–1 kg*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*16. A dose of medication was prescribed to be 35 microliters. Which of the following expresses that volume in centiliters?A. 3.5 × 105 cLB. 3.5 × 104 cLC. 3.5 cLD. 3.5 × 10–4 cL**E.** 3.5 × 10–3 cL*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*17. Which of the following represents the largest volume?A. 10,000 µLB. 1000 pL**C.** 100 mLD. 10 nLE. 10 cm3*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*18. You prepare 1000. mL of tea and transfer it to a 1.00-quart pitcher for storage. Which of the following statements is true?A. The pitcher will be filled to 100% of its capacity with no tea spilled.B. The pitcher will be filled to about 95% of its capacity.C. The pitcher will be filled to about 50% of its capacity.**D.** The pitcher will be completely filled and a small amount of tea will overflow.E. The pitcher will be completely filled and most of the tea will overflow.*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*19. In an average year, the American chemical industry produces more than 9.5 million metric tons of sodium carbonate. Over half of this is used in the manufacture of glass while another third is used in the production of detergents and other chemicals. How many pounds of sodium carbonate are produced annually?**A.** 2.1 × 1010 lbB. 4.3 × 109 lbC. 1.1 × 107 lbD. 2.2 × 106 lbE. 2.1 × 104 lb*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*20. A large pizza has a diameter of 15 inches. Express this diameter in centimeters.**A.** 38 cmB. 24 cmC. 18 cmD. 9.3 cmE. 5.9 cm*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*21. The average distance between the Earth and the Moon is 240,000 miles. Express this distance in kilometers.

A. 6.1 × 105 kmB. 5.3 × 105 km**C.** 3.9 × l05 kmD. 1.5 × 105 kmE. 9.4 × 104 km*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*22. The area of a 15-inch pizza is 176.7 in2. Express this area in square centimeters.

**A.** 1140. cm2B. 448.8 cm2C. 96.8 cm2D. 69.57 cm2E. 27.39 cm2*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*23. The speed needed to escape the pull of Earth's gravity is 11.3 km/s. What is this speed in mi/h?

A. 65,500 mi/h**B.** 25,300 mi/hC. 18,200 mi/hD. 1,090 mi/hE. 5.02 × 10–3 mi/h*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*24. The density of mercury, the only metal to exist as a liquid at room temperature, is 13.6 g/cm3. What is that density in pounds per cubic inch?A. 849 lb/in3B. 491 lb/in3C. 376 lb/in3**D.** 0.491 lb/in3E. 1.83 × 10–3 lb/in3*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*25. Given that 1 inch = 2.54 cm, 1 cm3 is equal toA. 16.4 in3.B. 6.45 in3.C. 0.394 in3.D. 0.155 in3.**E.** 0.0610 in3.*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*26. At a pressure of one billionth (10–9) of atmospheric pressure, there are about 2.7 × 1010 molecules in one cubic centimeter of a gas. How many molecules is this per cubic meter?**A.** 2.7 × 1016B. 2.7 × 1014C. 2.7 × 1012D. 2.7 × 108E. 2.7 × 104*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*27. If the price of gold at the morning fixing in London was $5310 per lb, what would a kilogram of gold have cost in £ (pounds)? (Assume an exchange rate of $1.00 = £0.545)A. £1310B. £3510**C.** £6370D. £10400E. £17100*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*28. Which of the following is not an SI base unit?A. meterB. ampereC. second**D.** gramE. kelvin*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*29. The symbol for the SI base unit of mass isA. mg.B. g.**C.** kg.D. metric ton.E. lb.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*30. Which of the following abbreviations of the given SI base unit is incorrect?A. second: sB. kilogram: kgC. kelvin: K**D.** mole: mE. ampere: A*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*

31. Which of the following abbreviations of the given SI base unit is incorrect?A. second: sB. kilogram: kgC. meter: mD. mole: mol**E.** kelvin: k*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*32. The SI prefix mega- (M) meansA. 10–6.B. 10–3.C. 103.**D.** 106.E. 109.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*33. The SI unit of speed (velocity) isA. km/h.B. km/s.C. m/h.**D.** m/s.E. None of these choices are correct.*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*34. The joule is the SI unit of energy and is equal to 1 kg m2 s–2. The erg is another energy unit, equal to 1 g cm2 s–2. Use unit conversion methods to work out how many ergs are in 1 joule.A. 10–1 ergsB. 10 ergsC. 102 ergsD. 105 ergs**E.** 107 ergs*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Measurement (SI Units)Topic: Study of Chemistry*35. Which of the following correctly shows how to convert a density of 20.1 g cm–3 to units of kg m–3?A. B. C. D. **E.**



*Bloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*36. If the density of a certain spherical atomic nucleus is 1.0 × 1014 g cm–3 and its mass is 2.0 × 10–23 g, what is its radius in cm?**A.** 3.6 × 10–13 cmB. 2.0 × 10–37 cmC. 4.8 × 10–38 cmD. 2.2 × 10–19 cmE. None of these choices are correct.*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: HardGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*37. Which of the following is an extensive property of oxygen?A. boiling pointB. temperatureC. average kinetic energy of moleculesD. density**E.** mass*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*38. A flask has a mass of 78.23 g when empty and 593.63 g when filled with water. When the same flask is filled with concentrated sulfuric acid, H2SO4, its mass is 1026.57 g. What is the density of concentrated sulfuric acid? (Assume water has a density of 1.00 g/cm3 at the temperature of the measurement.)A. 1.992 g/cm3**B.** 1.840 g/cm3C. 1.729 g/cm3D. 1.598 g/cm3E. 0.543 g/cm3*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*39. Talc is a mineral that has low conductivity for heat and electricity and that is not attacked by acid. It is used as talcum powder and face powder. A sample of talc weighs 35.97 g in air and 13.65 g in mineral oil (*d* = 1.75 g/cm3). What is the density of talc?A. 4.61 g/cm3**B.** 2.82 g/cm3C. 2.63 g/cm3D. 2.44 g/cm3E. 1.61 g/cm3*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: HardGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*40. Acetone, which is used as a solvent and as a reactant in the manufacture of Plexiglas®, boils at 56.1°C. What is the boiling point in degrees Fahrenheit?A. 159°F**B.** 133°FC. 101°FD. 69.0°FE. 43.4°F*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*41. Isopropyl alcohol, commonly known as rubbing alcohol, boils at 82.4°C. What is the boiling point in kelvins?A. 387.6 K**B.** 355.6 KC. 323.6 KD. 190.8 KE. –190.8 K*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*42. Acetic acid boils at 244.2°F. What is its boiling point in degrees Celsius?A. 382.0°CB. 167.7°CC. 153.4°C**D.** 117.9°CE. 103.7°C*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*43. Which one of the following numbers contains a digit or digits which is/are not significant?A. 970.0B. 502C. .300**D.** .0043E. 20.01*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*44. Select the answer that expresses the result of this calculation with the correct number of significant figures.

A. 13.3568B. 13.357C. 13.36D. 13.4**E.** 13



*Bloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*45. Select the answer that expresses the result of this calculation with the correct number of significant figures and with correct units.

16.18 cm × 9.6114 g ÷ 1.4783 cm2 =A. 105.2 g/cm3B. 105.2 g/cm2**C.** 105.2 g/cmD. 72.13 g/cm2E. 72.13 g/cm*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*46. Which measurement is expressed to 4 significant figures?A. 0.423 kgB. 24.049 cmC. 1300 KD. 82,306 m**E.** 62.40 g*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*47. Express 96,342 m using 2 significant figures.A. 9.60 × 104 m**B.** 9.6 × 104 mC. 9.60 × 10–4 mD. 9.6 × 10–4 mE. 96000. m*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*48. Select the answer with the correct number of decimal places for the following sum:13.914 cm + 243.1 cm + 12.00460 cm =A. 269.01860 cmB. 269.0186 cmC. 269.019 cmD. 269.02 cm**E.** 269.0 cm*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*49. The appropriate number of significant figures in the result of 15.234 × 15.208 isA. 2.B. 3.C. 4.**D.** 5.E. 6.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*50. The appropriate number of significant figures in the result of 15.234 – 15.208 isA. 1.**B.** 2.C. 3.D. 4.E. 5.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*51. The result of (3.8621 × 1.5630) – 5.98 is properly written as**A.** 0.06.B. 0.056.C. 0.0565.D. 0.05646.E. 0.056462.*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*52. As chief chemist at Superior Analytical Products (SAP) you must design an experiment to determine the density of an unknown liquid to three (3) significant figures. The density is of the order of 1 g/cm3. You have approximately 7 mL of the liquid and only graduated cylinders and balances are available for your use. Which of the following combinations of equipment will allow you to meet but not exceed your goal?A. graduated cylinder with ±0.1 mL uncertainty; balance with ±0.1 g uncertaintyB. graduated cylinder with ±0.01 mL uncertainty; balance with ±0.1 g uncertainty**C.** graduated cylinder with ±0.01 mL uncertainty; balance with ±0.01 g uncertaintyD. graduated cylinder with ±0.001 mL uncertainty; balance with ±0.001 g uncertaintyE. graduated cylinder with ±0.1 mL uncertainty; balance with ±0.001 g uncertainty*Accessibility: Keyboard NavigationBloom's: 3. ApplyDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*53. A student makes several measurements of the density of an unknown mineral sample. She then reports the average value of these measurements. The number of significant figures she uses in her result should be a measure of itsA. accuracy.**B.** precision.C. systematic error.D. determinate error.E. human error.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*54. The difference between a student's experimental measurement of the density of sodium chloride and the known density of this compound reflects the \_\_\_\_\_\_\_\_\_\_\_ of the student's result.**A.** accuracyB. precisionC. random errorD. systematic errorE. indeterminate error*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*55. Bud N. Chemist must determine the density of a mineral sample. His four trials yield densities of 4.77 g/cm3, 4.67 g/cm3, 4.69 g/cm3, and 4.81 g/cm3. Independent studies found the correct density to be 4.75 g/cm3. Which of the following statements represents the best analysis of the data?**A.** Bud's results have much greater accuracy than precision.B. Bud's results have much greater precision than accuracy.C. Bud's results have high accuracy and high precision.D. Bud's results have low accuracy and low precision.E. Bud's equipment is faulty.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*56. As part of an experiment to determine the density of a new plastic developed in her laboratory, Sara Ann Dippity measures the volume of a solid sample. Her four trials yield volumes of 12.37 cm3, 12.41 cm3, 12.39 cm3, and 12.38 cm3. Measurements of other scientists in the lab give an average volume of 12.49 cm3. Which of the following statements represents the best analysis of the data?A. Sara's results have low precision and high accuracy.B. Sara's results have high precision and high accuracy.**C.** Sara's results have greater precision than accuracy.D. Sara's results have greater accuracy than precision.E. Sara has been using a faulty instrument to measure the volume.*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*57. Which of the following correctly expresses 52,030.2 m in scientific notation?**A.** 5.20302 × 104 mB. 5.20302 × 105 mC. 5.203 × 104 mD. 5.20 × 104 mE. 5.2 × 104 m*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*58. Which of the following correctly expresses 0.000007913 g in scientific notation?A. 7.913 × 106 gB. 7.913 × 105 gC. 7.913 × 10–5 g**D.** 7.913 × 10–6 gE. 7.913 × 10–9 g*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*59. Classify the following properties of hydrogen gas as either intensive or extensive.a. the mass of the gas sample

* **extensive**
* intensive

b. the average speed of a molecule in the sample

* **intensive**
* extensive

c. temperature

* **intensive**
* extensive

d. density

* **intensive**
* extensive

e. number of molecules present

* **extensive**
* intensive

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*60. In each of the sets below, choose the one quantity or number which is exact.a. i. the human population

ii. the distance in light years from the sun to Alpha Centauri, a nearby star

iii. the winning time for the 100 m dash in the Olympic Games

* **i**
* ii
* iii

b. i. the weight of a particular one cent coin in g

ii. the boiling point of lead, in °C

iii. the number of cm in 1 yd

* i
* ii
* **iii**

c. i. the measured value of the speed of light (2.998 × 108 m/s)

ii.  (3.141)



iii. the volume of milk in a 1-gallon jug

* i
* **ii**
* iii

*Bloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Dimensional AnalysisTopic: Study of Chemistry*61. The ripening of fruit, once picked, is an example of physical change.**FALSE**

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*62. An important aim in much chemical work is to use macroscopic measurements in order to gain an understanding of the microscopic world.**TRUE**

*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: MediumGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*63. The potential energy of a car moving on a level road does not depend on its speed.**TRUE**

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Classification and States of MatterTopic: Study of Chemistry*64. When a wooden match burns in air, chemical potential energy is converted to kinetic energy.**TRUE**

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Classification and States of MatterTopic: Study of Chemistry*65. When applying the scientific method, it is important to avoid any form of hypothesis.**FALSE**

*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*66. When applying the scientific method, a model or theory should be based on experimental data.**TRUE**

*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*67. The numerical value of any temperature expressed in Celsius is always different from the numerical value of the same temperature in Fahrenheit.**FALSE**

*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: MediumGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*68. The numerical value of any temperature expressed in Celsius is always different from the numerical value of the same temperature in kelvin.**TRUE**

*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*69. The number 6.0448, rounded to 3 decimal places, becomes 6.045.**TRUE**

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*70. The number 6.0448, rounded to 2 decimal places, becomes 6.05.**FALSE**

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*71. The weight of a coin measured as 1.96235 g on one balance is definitely more accurate than a weight measurement of 1.95 g on another balance.**FALSE**

*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: MediumGradable: automaticSubtopic: Scientific Notation and Significant FiguresTopic: Study of Chemistry*72. Which of the following is a physical change?A. milk turning sourB. battery cables corrodingC. sugar turning brown when heated**D.** liquid water being cooled and forming iceE. an egg being hard-boiled*Accessibility: Keyboard NavigationBloom's: 2. UnderstandDifficulty: EasyGradable: automaticSubtopic: Properties of MatterTopic: Study of Chemistry*73. Which of the following processes and concepts is not a part of the "scientific method"?A. experimentB. observationC. model**D.** speculationE. law*Accessibility: Keyboard NavigationBloom's: 1. RememberDifficulty: MediumGradable: automaticSubtopic: Scientific MethodTopic: Study of Chemistry*

*Category* *# of Questions*

Accessibility: Keyboard Navigation 70

Bloom's: 1. Remember 20

Bloom's: 2. Understand 24

Bloom's: 3. Apply 29

Difficulty: Easy 37

Difficulty: Hard 3

Difficulty: Medium 33

Gradable: automatic 73

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Subtopic: Dimensional Analysis 13

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