Chemistry Molecular Nature of Matter and Change 9th edition Silberberg Test Bank

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Chemistry Molecular Nature of Matter and Change 9th Edition by Silberberg CH01

ANSWERS ARE LOCATED IN THE SECOND PART OF THIS DOCUMENT

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) The ripening of fruit, once picked, is an example of physical change.

1) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Properties of Matter

2) An important aim in much chemical work is to use macroscopic measurements in order to gain an understanding of the microscopic world.

2) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Bloom's : 1. Remember
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Method

3) The potential energy of a car moving on a level road does not depend on its speed.

3) _____

◎ true
◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Classification and States of Matter

4) When a wooden match burns in air, chemical potential energy is converted to kinetic energy.

4) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Classification and States of Matter

5) When applying the scientific method, it is important to avoid any form of hypothesis.

5) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Scientific Method

6) When applying the scientific method, a model or theory should be based on experimental data.

6) _____

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◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Scientific Method

7) The numerical value of any temperature expressed in Celsius is always different from the numerical value of the same temperature in Fahrenheit.

7) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Bloom's : 1. Remember
Difficulty : Medium
Gradable : automatic
Subtopic : Properties of Matter

8) The numerical value of any temperature expressed in Celsius is always different from the numerical value of the same temperature in kelvin.

8) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Properties of Matter

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9) The number 6.0448, rounded to 3 decimal places, becomes 6.045.

9) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

10) The number 6.0448, rounded to 2 decimal places, becomes 6.05.

10) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

11) 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.

11) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

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MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

12) Which one of the following is a "substance" in the sense of the word as used in your textbook?

12) _____

A) Air
B) Tap water
C) Sea water
D) Water
E) Toothpaste

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Classification and States of Matter

13) Select the best statement.

13) _____

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.

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Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Properties of Matter

14) Select the best statement.

14) _____

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.

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Properties of Matter

15) Which of the following is a chemical change?

15) _____

A) Boiling of water
B) Melting wax
C) Broiling a steak on a grill
D) Condensing water vapor into rainfall
E) Carving a piece of wood

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Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Properties of Matter

16) Water vapor is less dense than ice because

16) _____

A) 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.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Classification and States of Matter

17) During the swing of a frictionless pendulum, what energy form(s) remain constant?

17) _____

A) Kinetic energy only
B) Potential energy only
C) Both kinetic energy and potential energy
D) Kinetic plus potential energy
E) None of these choices are correct.

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Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Hard
Gradable : automatic
Subtopic : Classification and States of Matter

18) The most significant contribution to modern science made by alchemists was

18) _____

A) 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.

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Bloom's : 1. Remember
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Method

19) Select the best statement about chemistry before 1800.

19) _____

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.

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Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Bloom's : 1. Remember
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Method

20) Which of the following activities is not a part of good science?

20) _____

A) Proposing a theory
B) Developing a hypothesis
C) Making quantitative observations
D) Designing experiments
E) Indulging in speculation

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Scientific Method

21) 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 a

21) _____

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A) theory.
B) hypothesis.
C) law.
D) experiment.
E) definition.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Method

22) 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?

22) _____

A) Theory
B) Hypothesis
C) Law
D) Experiment
E) Definition

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Scientific Method

23) A detailed explanation of natural phenomena that is generally accepted and has been extensively tested is called a

23) _____

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A) theory.
B) hypothesis.
C) law.
D) fact.
E) postulate.

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Scientific Method

24) The distance between carbon atoms in ethylene is 134 picometers. Which of the following expresses that distance in meters?

24) _____

A) 1.34×10^{-13} m
B) $1.34 \times 10^{-}12$ m
C) 1.34×10^{-10} m
D) 1.34×10^{-7} m
E) 1.34×10^{-6} m

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Measurement (SI Units)

25) The average distance from Earth to the Sun is 150 megameters. What is that distance in meters?

25) _____

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A) 1.5 × 108 m
B) 1.5 × 106 m
C) 1.5 × 105 m
D) 1.5 × 103 m
E) 1.5 × 10−6 m

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Measurement (SI Units)

26) The mass of a sample is 550 milligrams. Which of the following expresses that mass in kilograms?

26) _____

A) 5.5 × 108 kg
B) 5.5 × 105 kg
C) 5.5 × 10−4 kg
D) 5.5 × 10−6 kg
E) 5.5 × 10−1 kg

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Measurement (SI Units)

27) A dose of medication was prescribed to be 35 microliters. Which of the following expresses that volume in centiliters?

27) _____

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A) 3.5 × 105 cL
B) 3.5 × 104 cL
C) 3.5 cL
D) 3.5 × 10−4 cL
E) 3.5 × 10−3 cL

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Measurement (SI Units)

28) Which of the following represents the largest volume?

28) _____

A) 10,000 µL
B) 1000 pL
C) 100 mL
D) 10 nL
E) 10 cm3

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Measurement (SI Units)

29) You prepare 1000. mL of tea and transfer it to a 1.00-quart pitcher for storage. Which of the following statements is true?

29) _____

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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.

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

30) 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?

30) _____

A) 2.1 × 1010 lb
B) 4.3 × 109 lb
C) 1.1 × 107 lb
D) 2.2 × 106 lb
E) 2.1 × 104 lb

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

31) A large pizza has a diameter of 15 inches. Express this diameter in centimeters.

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31) _____

A) 38 cm
B) 24 cm
C) 18 cm
D) 9.3 cm
E) 5.9 cm

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

32) The average distance between the Earth and the Moon is 240,000 miles. Express this distance in kilometers.

32) _____

A) 6.1×10^5 km
B) 5.3×10^5 km
C) $3.9 \times l0^5$ km
D) 1.5×10^5 km
E) 9.4×10^4 km

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

33) The area of a 15-inch pizza is 176.7 in^2. Express this area in square centimeters.

33) _____

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A) 1140. cm^2
B) 448.8 cm^2
C) 96.8 cm^2
D) 69.57 cm^2
E) 27.39 cm^2

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

34) The speed needed to escape the pull of Earth's gravity is 11.3 km/s. What is this speed in mi/h?

34) _____

A) 65,500 mi/h
B) 25,300 mi/h
C) 18,200 mi/h
D) 1,090 mi/h
E) 5.02 × 10−3 mi/h

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

35) The density of mercury, the only metal to exist as a liquid at room temperature, is 13.6 g/cm^3. What is that density in pounds per cubic inch?

35) _____

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A) 849 lb/in^3
B) 491 lb/in^3
C) 376 lb/in^3
D) 0.491 lb/in^3
E) 1.83 × 10 − 3 lb/in^3

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

36) Given that 1 inch = 2.54 cm, 1 cm^3 is equal to

36) _____

A) 16.4 in^3.
B) 6.45 in^3.
C) 0.394 in^3.
D) 0.155 in^3.
E) 0.0610 in^3.

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

37) At a pressure of one billionth (10^{-9}) of atmospheric pressure, there are about 2.7 × 10^{10} molecules in one cubic centimeter of a gas. How many molecules is this per cubic meter?

37) _____

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A) 2.7×10^{16}
B) 2.7×10^{14}
C) 2.7×10^{12}
D) 2.7×10^{8}
E) 2.7×10^{4}

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

38) 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)

38) _____

A) £1310
B) £3510
C) £6370
D) £10400
E) £17100

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

39) Which of the following is not an SI base unit?

39) _____

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A) Meter
B) Ampere
C) Second
D) Gram
E) Kelvin

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Measurement (SI Units)

40) The symbol for the SI base unit of mass is

40) _____

A) mg.
B) g.
C) kg.
D) metric ton.
E) lb.

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Measurement (SI Units)

41) Which of the following abbreviations of the given SI base unit is incorrect?

41) _____

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A) second: s
B) kilogram: kg
C) kelvin: K
D) mole: m
E) ampere: A

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Measurement (SI Units)

42) Which of the following abbreviations of the given SI base unit is incorrect?

42) _____

A) second: s
B) kilogram: kg
C) meter: m
D) mole: mol
E) kelvin: k

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Measurement (SI Units)

43) The SI prefix mega- (M) means

43) _____

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A) 10^{-6}.
B) 10^{-3}.
C) 10^{3}.
D) 10^{6}.
E) 10^{9}.

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Measurement (SI Units)

44) The SI unit of speed (velocity) is

44) _____

A) km/h.
B) km/s.
C) m/h.
D) m/s.
E) None of these choices are correct.

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 1. Remember
Gradable : automatic
Subtopic : Measurement (SI Units)

45) The joule is the SI unit of energy and is equal to 1 kg m^2 s^{-2}. The erg is another energy unit, equal to 1 g cm^2 s^{-2}. Use unit conversion methods to work out how many ergs are in 1 joule.

45) _____

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A) 10^{-1} ergs
B) 10 ergs
C) 10^{2} ergs
D) 10^{5} ergs
E) 10^{7} ergs

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Measurement (SI Units)

46) Which of the following correctly shows how to convert a density of 20.1 g cm^{-3} to units of kg m^{-3}?

46) _____

A) $\frac{20.1\text{ g}}{1\text{ cm}^3}\times\frac{1000\text{ kg}}{1\text{ g}}\times\frac{1\text{ cm}^3}{0.01\text{ m}^3}$

B) $\frac{20.1\text{ g}}{1\text{ cm}^3}\times\frac{1\text{ kg}}{1000\text{ g}}\times\frac{1\text{ cm}^3}{0.01\text{ m}^3}$

C) $\frac{20.1\text{ g}}{1\text{ cm}^3}\times\frac{1\text{ kg}}{1000\text{ g}}\times\frac{0.01\text{ cm}^3}{1\text{ m}^3}$

D) $\frac{20.1\text{ g}}{1\text{ cm}^3}\times\frac{1\text{ kg}}{1000\text{ g}}\times\frac{(0.01\text{ cm})^3}{(1\text{ m})^3}$

E) $\frac{20.1\text{ g}}{1\text{ cm}^3}\times\frac{1\text{ kg}}{1000\text{ g}}\times\frac{(1\text{ cm})^3}{(0.01\text{ m})^3}$

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Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

47) If the density of a certain spherical atomic nucleus is 1.0×10^{14} g cm^{-3} and its mass is 2.0×10^{-23} g, what is its radius in cm?

47) _____

A) 3.6×10^{-13} cm
B) 2.0×10^{-37} cm
C) 4.8×10^{-38} cm
D) 2.2×10^{-19} cm
E) None of these choices are correct.

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Hard
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Dimensional Analysis

48) Which of the following is an extensive property of oxygen?

48) _____

A) Boiling point
B) Temperature
C) Average kinetic energy of molecules
D) Density
E) Mass

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Chemistry Molecular Nature of Matter and Change 9th Edition by Silberberg CH01

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Properties of Matter

49) 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, H_2SO_4, its mass is 1026.57 g. What is the density of concentrated sulfuric acid? (Assume water has a density of 1.00 g/cm^3 at the temperature of the measurement.)

49) _____

A) 1.992 g/cm^3
B) 1.840 g/cm^3
C) 1.729 g/cm^3
D) 1.598 g/cm^3
E) 0.543 g/cm^3

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Properties of Matter

50) 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/cm^3). What is the density of talc?

50) _____

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A) 4.61 g/cm^3
B) 2.82 g/cm^3
C) 2.63 g/cm^3
D) 2.44 g/cm^3
E) 1.61 g/cm^3

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Hard
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Properties of Matter

51) 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?

51) _____

A) 159°F
B) 133°F
C) 101°F
D) 69.0°F
E) 43.4°F

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Properties of Matter

52) Isopropyl alcohol, commonly known as rubbing alcohol, boils at 82.4°C. What is the boiling point in kelvins?

52) _____

Chemistry Molecular Nature of Matter and Change 9th edition Silberberg Test Bank

A) 387.6 K
B) 355.6 K
C) 323.6 K
D) 190.8 K
E) −190.8 K

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Properties of Matter

53) Acetic acid boils at 244.2°F. What is its boiling point in degrees Celsius?

53) _____

A) 382.0°C
B) 167.7°C
C) 153.4°C
D) 117.9°C
E) 103.7°C

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Properties of Matter

54) Which one of the following numbers contains a digit or digits which is/are not significant?

54) _____

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A) 970.0
B) 502
C) 0.300
D) 0.0043
E) 20.01

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

55) Select the answer that expresses the result of this calculation with the correct number of significant figures.

$$\frac{13.602 \times 1.90 \times 3.06}{4.2 \times 1.4097} =$$

55) _____

A) 13.3568
B) 13.357
C) 13.36
D) 13.4
E) 13

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

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56) 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 cm^2 =

56) _____

A) 105.2 g/cm^3
B) 105.2 g/cm^2
C) 105.2 g/cm
D) 72.13 g/cm^2
E) 72.13 g/cm

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

57) Which measurement is expressed to 4 significant figures?

57) _____

A) 0.423 kg
B) 24.049 cm
C) 1300 K
D) 82,306 m
E) 62.40 g

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

Chemistry Molecular Nature of Matter and Change 9th edition Silberberg Test Bank

58) Express 96,342 m using 2 significant figures.

58) _____

A) 9.60×10^4 m
B) 9.6×10^4 m
C) 9.60×10^{-4} m
D) 9.6×10^{-4} m
E) 96000. m

Question Details
Accessibility : Keyboard Navigation
Difficulty : Easy
Topic : Study of Chemistry
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

59) Select the answer with the correct number of decimal places for the following sum:

13.914 cm + 243.1 cm + 12.00460 cm =

59) _____

A) 269.01860 cm
B) 269.0186 cm
C) 269.019 cm
D) 269.02 cm
E) 269.0 cm

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

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60) The appropriate number of significant figures in the result of 15.234 × 15.208 is

60) _____

A) 2.
B) 3.
C) 4.
D) 5.
E) 6.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

61) The appropriate number of significant figures in the result of 15.234 − 15.208 is

61) _____

A) 1.
B) 2.
C) 3.
D) 4.
E) 5.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

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62) The result of (3.8621 × 1.5630) − 5.98 is properly written as

62) _____

A) 0.06.
B) 0.056.
C) 0.0565.
D) 0.05646.
E) 0.056462.

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

63) 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/cm^3. 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?

63) _____

A) Graduated cylinder with ±0.1 mL uncertainty; balance with ±0.1 g uncertainty
B) 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 uncertainty
D) Graduated cylinder with ±0.001 mL uncertainty; balance with ±0.001 g uncertainty
E) Graduated cylinder with ±0.1 mL uncertainty; balance with ±0.001 g uncertainty

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Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Difficulty : Medium
Bloom's : 3. Apply
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

64) 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 its

64) _____

A) accuracy.
B) precision.
C) systematic error.
D) determinate error.
E) human error.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

65) 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.

65) _____

A) accuracy
B) precision
C) random error
D) systematic error
E) indeterminate error

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Chemistry Molecular Nature of Matter and Change 9th Edition by Silberberg CH01

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Bloom's : 1. Remember
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

66) Bud N. Chemist must determine the density of a mineral sample. His four trials yield densities of 4.77 g/cm^3, 4.67 g/cm^3, 4.69 g/cm^3, and 4.81 g/cm^3. Independent studies found the correct density to be 4.75 g/cm^3. Which of the following statements represents the best analysis of the data?

66) _____

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.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

67) 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 cm^3, 12.41 cm^3, 12.39 cm^3, and 12.38 cm^3. Measurements of other scientists in the lab give an average volume of 12.49 cm^3. Which of the following statements represents the best analysis of the data?

67) _____

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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.

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Topic : Study of Chemistry
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

68) Which of the following correctly expresses 52,030.2 m in scientific notation?

68) _____

A) 5.20302×10^4 m
B) 5.20302×10^5 m
C) 5.203×10^4 m
D) 5.20×10^4 m
E) 5.2×10^4 m

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

69) Which of the following correctly expresses 0.000007913 g in scientific notation?

69) _____

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A) 7.913×10^{6} g
B) 7.913×10^{5} g
C) 7.913×10^{-5} g
D) 7.913×10^{-6} g
E) 7.913×10^{-9} g

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Scientific Notation and Significant Figures

70) Which of the following is a physical change?

70) _____

A) Milk turning sour
B) Battery cables corroding
C) Sugar turning brown when heated
D) Liquid water being cooled and forming ice
E) An egg being hard-boiled

Question Details
Accessibility : Keyboard Navigation
Bloom's : 2. Understand
Difficulty : Easy
Topic : Study of Chemistry
Gradable : automatic
Subtopic : Properties of Matter

71) Which of the following processes and concepts is not a part of the "scientific method"?

71) _____

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A) Experiment
B) Observation
C) Model
D) Speculation
E) Law

Question Details
Accessibility : Keyboard Navigation
Topic : Study of Chemistry
Bloom's : 1. Remember
Difficulty : Medium
Gradable : automatic
Subtopic : Scientific Method

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Answer Key

Test name: CH01

1) FALSE
2) TRUE
3) TRUE
4) TRUE
5) FALSE
6) TRUE
7) FALSE
8) TRUE
9) TRUE
10) FALSE
11) FALSE
12) D
13) A
14) C
15) C
16) E
17) D
18) B
19) C
20) E
21) C
22) B
23) A
24) C
25) A

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26) C
27) E
28) C
29) D
30) A
31) A
32) C
33) A
34) B
35) D
36) E
37) A
38) C
39) D
40) C
41) D
42) E
43) D
44) D
45) E
46) E
47) A
48) E
49) B
50) B
51) B
52) B
53) D
54) D
55) E

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56) C
57) E
58) B
59) E
60) D
61) B
62) A
63) C
64) B
65) A
66) A
67) C
68) A
69) D
70) D
71) D

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