

**1. The mass of an object is**

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

ANSWER: b  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

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

ANSWER: a  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

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

ANSWER: b  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

**4. The weight of an object is**

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

ANSWER: a  
POINTS: 1  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

Chapter 01 - Matter, Measurements, and Calculations

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

ANSWER: d  
POINTS: 1  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

**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  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

**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  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

**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  $-10^{\circ}\text{F}$   
d. the surface turns black in air

ANSWER: c  
POINTS: 1  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

HAS VARIABLES:

False

DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

HAS VARIABLES:

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DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

HAS VARIABLES:

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DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

HAS VARIABLES:

False

DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

14. Which of the following terms correctly applies to a molecule of  $\text{CO}_2$ ?

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

ANSWER: a  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

15. Table salt,  $\text{NaCl}$  is best classified as a(n) \_\_\_\_\_.

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

ANSWER: a  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

16. The limit of physical subdivision of pure  $\text{H}_2\text{O}$  is \_\_\_\_\_.

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

ANSWER: b  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

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

ANSWER: b  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

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- 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

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DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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Multiple Choice

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3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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False

DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

22. **Early measurements of length were based on**

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- 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

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Multiple Choice

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DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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

ANSWER:

d

POINTS:

1

QUESTION TYPE:

Multiple Choice

HAS VARIABLES:

False

DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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False

DATE CREATED:

3/4/2016 3:37 PM

DATE MODIFIED:

3/4/2016 3:37 PM

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

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HAS VARIABLES: False  
DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

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

ANSWER: b  
POINTS: 1  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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

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

ANSWER: b  
POINTS: 1  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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.  $5.53 \times 10^3$                       b.  $1.81 \times 10^{-4}$                       c.  $4.88 \times 10^8$                       d.  $2.05 \times 10^{-9}$

ANSWER: b  
POINTS: 1  
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DATE CREATED: 3/4/2016 3:37 PM  
DATE MODIFIED: 3/4/2016 3:37 PM

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.  $6.34 \times 10^{21}$                       b.  $1.58 \times 10^{-22}$                       c.  $6.34 \times 10^{-2}$                       d. 15.8