

## Chemistry SAT Practice Test 23

### SET-1

1. A baking powder can carries the statement, "Ingredients: corn starch, sodium bicarbonate, calcium hydrogen phosphate, and sodium aluminum sulfate." Therefore, this baking powder is

- A. a compound
- B. a mixture
- C. a molecule
- D. a mixture of elements
- E.

2. Which of the following is a physical property of sugar?

- A. It decomposes readily.
- B. Its composition is carbon, hydrogen, and oxygen.
- C. It turns black with concentrated  $\text{H}_2\text{SO}_4$ .
- D. It can be decomposed with heat.
- E. It is a white crystalline solid.

3. A substance that can be further simplified using ordinary means may be either

- A. an element or a compound
- B. an element or a mixture
- C. a mixture or a compound
- D. a mixture or an atom
- E.

4. Chemical action may involve all of the following EXCEPT

- A. combining of atoms of elements to form a molecule
- B. separation of the molecules in a mixture
- C. breaking down compounds into elements
- D. reacting a compound and an element to form a new compound and a new element
- E.

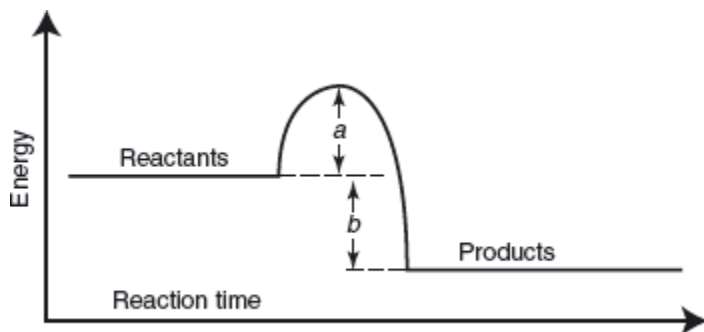
5. The energy of a system can be

- A. easily changed to mass
- B. transformed into a different form
- C. measured only as potential energy
- D. measured only as kinetic energy
- E.

6. If the  $\Delta H$  of a reaction is a negative quantity, the reaction is definitely

- A. endothermic
- B. unstable
- C. exothermic
- D. reversible
- E.

7. If the graphic representation of the energy levels of the reactants and products in a chemical reaction looks like this:



Which of the following statements are true?

- I. The activation energy for the forward reaction is represented by the "a" portion.
  - II. The activation energy for the forward reaction is represented by the "b" portion of the graph.
  - III. The "a" portion is the energy given off in the forward reaction.
- A. I only
  - B. II only
  - C. I and III only
  - D. II and III only
  - E. I, II, and III

**8.** A substance that can be further simplified by ordinary chemical means may be which of the following?

I. An element or a compound

II. A mixture or a compound

III. An element of a mixture

A. I only

B. II only

C. III only

D. I and II only

E. I, II, and III

### SET-2

**1.** Gives the mass per unit volume

A. Density

B. A solid

C. Volume

D. Weight

E. Matter

**2.** Has mass and a definite size and shape

A. Density

B. A solid

C. Volume

D. Weight

E. Matter

**3.** Gives the space occupied

A. Density

B. A solid

C. Volume

D. Weight

E. Matter

4. Has mass and occupies space

A. Density

B. A solid

C. Volume

D. Weight

E. Matter

5. Defined as a measure of the mass times the gravitational force

A. Density

B. A solid

C. Volume

D. Weight

E. Matter

6. A substance composed of two or more elements chemically combined is called a mixture

**BECAUSE**

the properties of the constituents of a mixture are retained.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

7. A chemical change involves change in the composition and molecular structure of the reactants

**BECAUSE**

in a chemical reaction bonds are broken and new substances and new bonds are formed.

A. T,F

B. F,T

C. T,T

D. F,F

E. T,T,CE

8. The burning of paper is a physical change

**BECAUSE**

when a chemical change occurs energy is either gained or lost by the reactants.

- A. T,F
- B. F,T
- C. T,T
- D. F,F
- E. T,T,CE

**SET-3**

1. The two main regions of an atom are the

- A. principal energy levels and energy sublevels
- B. nucleus and kernel
- C. nucleus and energy levels
- D. planetary electrons and energy levels
- E.

2. The lowest principal quantum number that an electron can have is

- A. 0
- B. 1
- C. 2
- D. 3
- E.

3. The sublevel that has only one orbital is identified by the letter

- A. *s*
- B. *p*
- C. *d*
- D. *f*
- E.

4. The sublevel that can be occupied by a maximum of 10 electrons is identified by the letter

A. *d*

B. *f*

C. *p*

D. *s*

E.

**5.** An orbital may never be occupied by

A. 1 electron

B. 2 electrons

C. 3 electrons

D. 0 electrons

E.

**6.** An atom of beryllium consists of 4 protons, 5 neutrons, and 4 electrons. The mass number of this atom is

A. 13

B. 9

C. 8

D. 5

E.

**7.** The number of orbitals in the second principal energy level,  $n = 2$ , of an atom is

A. 1

B. 9

C. 16

D. 4

E.

**8.** Lewis structure consists of the symbol representing the element and an arrangement of dots that usually shows


A. the atomic number

B. the atomic mass

C. the number of neutrons

D. the electrons in the outermost energy level

E.

9. Chlorine is represented by the Lewis structure . The atom that would be represented by an identical electron-dot arrangement has the atomic number

A. 7

B. 9

C. 15

D. 19

E.

10. Radioactive changes differ from ordinary chemical changes because radioactive changes

A. involve changes in the nucleus

B. are explosive

C. absorb energy

D. release energy

E.

11. Isotopes of uranium have different

A. atomic numbers

B. atomic masses

C. numbers of planetary electrons

D. numbers of protons

E.