

1. Compared to metals, nonmetals are

- (A). more brittle as a solid.
- (B). better electrical conductors.
- (C). more ductile as a solid.
- (D). better conductors of heat.

2. Under ordinary, room temperature conditions, the greatest number of elements are

- (A). gases.
- (B). liquids.
- (C). metallic solids.
- (D). nonmetallic plasmas.

3. Which of the following represents a physical change?

- (A). Electricity is used to generate oxygen and hydrogen from water.
- (B). Calcium carbonate is dissolved by stomach acid.
- (C). Solid ice is melted into liquid water.
- (D). Natural gas is burned as a heat source.

4. Carbon cannot be broken down into anything simpler by chemical means, so carbon must be

- (A). a heterogeneous mixture.
- (B). a homogeneous mixture.
- (C). an element.
- (D). a compound.

5. Isotopes are atoms of an element with identical chemical properties but with different

- (A). numbers of protons.
- (B). masses.
- (C). numbers of electrons.
- (D). atomic numbers.

6. The weighted average of the masses of the stable isotopes of an element as they occur in nature is called the

- (A). atomic number.
- (B). atomic mass.
- (C). atomic weight.
- (D). mass number.

7. The modern periodic law is based on

- (A). atomic number.
- (B). atomic mass.
- (C). atomic weight.
- (D). chemical activity.

8. Each family, or group of elements in a vertical column of the periodic table has elements with chemical characteristics that are

- (A). exactly the same.
- (B). similar.
- (C). different.
- (D). exactly opposite.

9. Which of the following belongs to the alkali metal family of elements?

- (A). sodium
- (B). calcium
- (C). chlorine
- (D). neon

10. Which of the following belongs to the halogen family of elements?

- (A). sodium
- (B). calcium
- (C). chlorine
- (D). neon

11. Which of the following belongs to the noble gas family of elements?

- (A). sodium
- (B). calcium
- (C). chlorine
- (D). neon

12. An atom of an element belonging to the alkali metal family has

- (A). one outer shell electron.
- (B). two outer shell electrons.
- (C). all outer shell electrons but one.
- (D). all outer shell electrons.

13. An atom of an element belonging to the halogen family has

- (A). one outer shell electron.
- (B). two outer shell electrons.
- (C). all outer shell electrons but one.
- (D). all outer shell electrons.

14. An atom of an element belonging to the noble gas family has

- (A). one outer shell electron.
- (B). two outer shell electrons.
- (C). all outer shell electrons but one.
- (D). all outer shell electrons.

15. Has one valence electron and 4 neutrons. Burns with a red flame.

- a. Cl
- b. Na
- c. Li
- d. Cs

16. What is the valence number of electrons for Mg?

- a. 1
- b. 2
- c. 3
- d. 12

17. Brittle substance which are good insulators and poor conductors are:

- a. metals
- b. nonmetals
- c. metalloids

18. This metal has a valence of 3 and a mass slightly less than tin. It is:
- Silver
 - gold
 - cadmium
 - indium
19. Which always tend to lose electrons?
- metals
 - nonmetals
 - metalloids
20. Which of the following is a metalloid (i.e., a semi-metal)?
- F
 - Cl
 - Br
 - I
 - At
21. Which halogen is most likely to gain an electron?
- F
 - Cl
 - Br
 - I
 - At
22. Which is the largest halogen?
- F
 - Cl
 - Br
 - I
 - At
23. Which of the following would require the most energy in order to remove one electron?
- Na
 - Mg
 - Al
 - P
24. Which of the following might like to gain three electrons in order to have 8 electrons in its outer shell?
- Na
 - Mg
 - Al
 - P
25. Which of the following is **most** likely to lose electrons?
- Na
 - Mg
 - Al
 - P
26. Which of the following shows a decrease in atomic size as atomic number increases?
- a. family b. series c. period d. b and c

