Name: ________________________ **Class:** ___________________ **Date:** __________ **ID: A**

Periodic Table

Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 1. Elements in a group of the periodic table are described below.

Some Properties of a Certain Group of Elements

- Soft silvery-white color
- Good conductor of thermal energy
- Good conductor of electricity
- Atoms contain a single valence electron

These elements most likely belong to which group?

a. Alkali metals
b. Alkaline earth metals
c. Halogens
d. Noble gases

____ 2. Which of these elements is most likely to donate one electron?

a. Be
b. Cs
c. Rn
d. He

____ 3. Which of the following elements would lose electrons and become smaller when it becomes an ion?

a. Silicon
b. Lead
c. Sulfur
d. Carbon

____ 4. X-ray crystallography is a technique that allows scientists to determine the ionic and atomic radii of elements. Which of these statements correctly describes a trend in ionic or atomic radii in the periodic table?

a. The ionic radius decreases from top to bottom in a group.
b. The atomic radius increases from left to right across a period.
c. The ionic radius remains constant from right to left across a period.
d. The atomic radius increases from top to bottom in a group.

____ 5.

Which statements is true about electrons in their energy levels?

a. Electrons closer to the nucleus require more energy to remove.
b. Elements with greater atomic mass require more ionization energy.
c. Elements with small atomic radii easily gain electrons.
d. Electrons are lost from the inner energy levels first.

____ 6. According to the periodic table, which of these elements will form an ion with a –2 charge?

a. Oxygen
b. Sodium
c. Calcium
d. Chlorine

____ 7. According to the periodic table of the elements, how many valence electrons are present in an atom of nitrogen?

a. 14
c. 5
b. 15
d. 7

____ 8. Early chemists began to look for patterns and group elements in attempts to find what was eventually named the periodic law. The development of this idea led to the creation of the periodic table. This pursuit began because scientists observed which of the following?

a. Most important compounds from living things contain carbon
b. Oxygen tends to be a very reactive gaseous substance
c. Most elements exist in the solid state at room temperature
d. Some elements have very similar properties to others

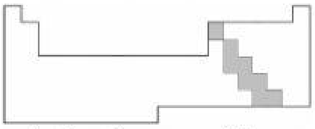
____ 9.

Calcium (Ca^{2+}) + Chloride (Cl^{-}) → Calcium chloride

The chemical formula for calcium chloride is —

a. Ca_2Cl
c. $CaCl_2$
b. $CaCl$
d. Ca_2Cl_3

____ 10.



What is the name of the shaded region in the diagram of the periodic table shown above?

a. Halogens
c. Metalloids
b. Noble Gases
d. Transition Metals

____ 11. Which of the following elements has the greatest electronegativity based on its placement on the periodic table?

a. Chlorine
c. Nitrogen
b. Phosphorous
d. Bromine

____ 12.

26	27	28
Fe	**Co**	**Ni**
55.847	58.933	58.69
Iron	Cobalt	Nickel

The elements shown above referred to as the iron triad. What unique physical property is shared by the elements of this triad?

a. They are only form covalent compounds with other metals
b. They all have densities lower than water allowing them to float
c. They all exist in the gaseous phase at room temperature
d. The ability to be formed into permanent magnets

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____ 13. How many valence electrons does a neutral atom of silicon have?

a. 3
c. 5
b. 4
d. 6

____ 14. Which of the following groups contains members with similar chemical reactivity?

a. K, Ca, Sc
c. Na, K, Ca
b. C, N, O
d. Mg, Ca, Sr

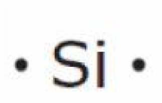
____ 15.

Lead (Pb) is a poisonous heavy metal that was used for plumbing purposes and as an ingredient in colorful paints for decades in the United States. Some of the symptoms of lead poisoning include fatigue, muscle cramps, kidney failure, and inhibition of the central nervous system. In 1978 it finally became illegal to make or use lead based paints in the United States, and in 1986 a law was passed banning the lead based solder used by plumbers.

Which of the following elements has physical and chemical properties that are similar to lead?

a. Bismuth b. Thallium c. Antimony d. Tin

____ 16. Which of the following shows a correct Lewis dot structure?

a.


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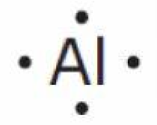

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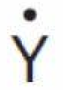

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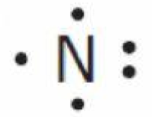


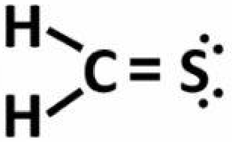
____ 17. What is the name Group 17 on the periodic table?

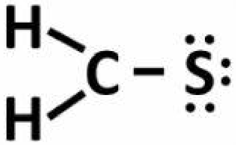
a. Alkali Metals
c. Alkaline Earth Metals
b. Halogens
d. Noble Gases

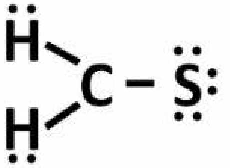
____ 18.

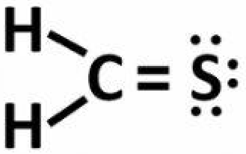
$$\boxed{CH_2S}$$

Which diagram accurately represents the structure of a compound whose formula is shown above?

a. 

c. 

b. 

d. 

____ 19. What is the name for the compound $CaSO_4$?

a. Calcium sulfur oxygen
c. Calcium sulfate
b. Calcium sulfide
d. Calcium sulfur oxide

____ 20. Magnesium chloride is a coagulant used in the preparation of tofu, and it is mainly obtained from seawater. The correct formula for magnesium chloride is —

a. Mg_2Cl_3
c. Mg_2Cl
b. $MgCl_2$
d. $MgCl$