SNC 1D

SAMPLE TEST 5.1-5.4

PART A - MULTIPLE CHOICE

Circle the letter of the correct response to each question.

1. Which of the following is a particle in an atom that has no electrical charge?

   A) proton B) electron C) neutron D) nucleus

2. Which of the following particles are found in the nucleus of an atom?

   A) protons and electrons
   B) protons and neutrons
   C) electrons and neutrons
   D) electrons and orbits

3. In the periodic table, elements with similar chemical properties appear in the same...

   A) period B) group C) shell D) row

4. What is the name given to the number of protons in an atom of an element?

   A) atomic number
   B) period
   C) group
   D) isotope

5. Kara tests an object and determines that it is made of a substance that is dull, brittle, and a poor conductor of electricity. Which of the following groups would the substance most likely belong to?

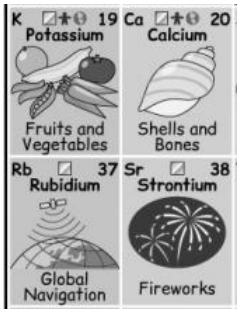
   A) metals B) metalloids C) non-metals D) alloys

6. Which of the following elements is an example of a metal?

   A) calcium B) sulfur C) carbon D) iodine

7. The figure to the right shows boxes from the periodic table for four elements. Which element contains the greatest number of protons in each of its atoms?

   A) potassium
   B) rubidium
   C) calcium
   D) strontium



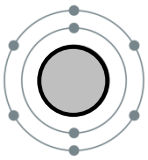
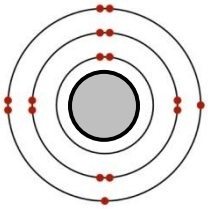
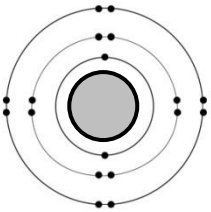
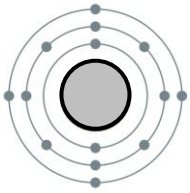
8. Some elements are located along a dark line on the periodic table that looks like a staircase. Which of the following groups do these elements belong to?

   A) alkali metals
   B) alkaline earth metals
   C) metalloids
   D) non-metals

9. Which of the following elements is in the same period as neon?

A) oxygen B) chlorine C) argon D) lithium

10. Which atomic model shows an atom of sulfur?

A)  B)  C)  D) 

11. Dalton devised the first modern atomic model. Which one of the following characteristics is NOT part of Dalton's atomic model?

A) Atoms of different elements are different.

B) All atoms of the same element are identical.

C) Atoms combine to form compounds.

D) Atoms consist of positive particles and negative particles.

12. The scientist who discovered the neutron is _____.

A) Chadwick B) Rutherford C) Thomson D) Dalton

13. The British scientist who conducted experiments using alpha particles on a thin gold foil and said that an atom has a dense positive center called the 'nucleus' is _____.

A) Chadwick B) Rutherford C) Thomson D) Dalton

14. Potassium belongs to the group of elements known as...

A) alkaline earth metals C) halogens

B) alkali metals D) noble gases

15. Sodium is more reactive than lithium because

A) it has fewer valence electrons than lithium.

B) it has more valence electrons than lithium.

C) its valence electron is farther away from its nucleus than lithium's valence electron is from its nucleus.

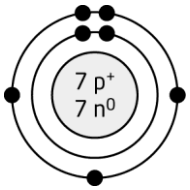
D) its valence electron is closer to its nucleus than lithium's valence electron is to its nucleus.

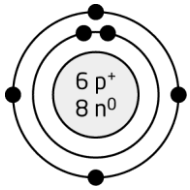
PART B: FILL IN THE BLANKS

1. What is the maximum number of electrons in the 2nd electron shell? _____
2. How many electrons does arsenic have in its outer shell? _____
3. How many electron shells does rubidium have? _____
4. How many electron shells does bromine have? _____
5. How many valence electrons do all group 2 elements have? _____
6. How many electrons would a group 7A element need to obtain a full outer shell? _____
7. An element in group 3A would be more likely to _____electrons. How many?____
   (gain, lose)
8. An atom gains, loses or shares electrons in order to _____
9. Give the name of the element in group 5A that has 3 electron shells. _____
10. How many neutrons does a copper atom have? _____
11. Atomic size _____down a group.
    (increases/decreases)
12. From left to right across a period, the atomic size _____.
    (increases/decreases)
13. A halogen with an atomic size greater than bromine is _____
14. A period 3 element with an atomic size greater than phosphorus is _____
15. Which group of elements tends to be unreactive, and why? _____
    _____

PART C: SHORT ANSWER: Answer the following in the space provided.

1. A) Name each atom and write the standard atomic notation.





   B) What is the same about each atom? [Name 2 items.]

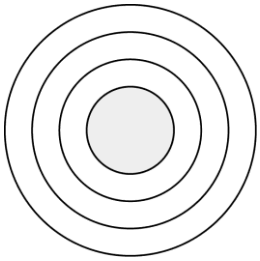
   C) What is different about the atoms? [Name 2 items.]

2. Chlorine – 35 and chlorine – 37 are 2 isotopes of the element.

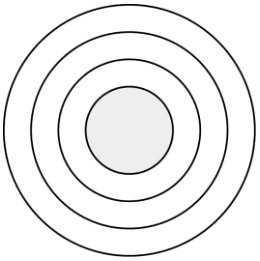
   A) Define the term isotope.
   B) What is similar about these isotopes?
   C) What is different about these isotopes?

3. Draw Bohr Rutherford diagrams including the number of each subatomic particle.

A) magnesium – 29



B) phosphorus – 32



4. Complete the following table.

atomic number	element name	atomic notation	# p^+	# e^-	# n^o	electron configuration
		$^{22}_{10}Ne$				
						2, 8, 6
	lithium – 9					

5. Write the name of the element with the given description.

A) period 5, group 17

B) period 4, group 2

C) halogen, 3 electron shells

D) 2 valence electrons, 6 shells

6. In each group of elements, <u>underline</u> the element that has the largest atom.

A) potassium, sodium, lithium

B) boron, nitrogen, fluorine

C) aluminum, neon, argon

D) argon, bromine, krypton

7. In each pair of elements, <u>underline</u> the element that is more reactive.

A) potassium, rubidium

B) fluorine, bromine

C) sulfur, argon

D) lithium, beryllium