Ch. 3 Review Name:_____

1. For the element, arsenic, determine each of the following:
   a. number of protons
   b. number of neutrons
   c. number of electrons
   d. atomic mass

2. Write the full electron configuration for each of the following elements:
   a. Al –

   b. Fe –

   c. Br –

   d. B –

3. Write the noble gas notation for each of the following elements:
   a. K –

   b. Ni –

   c. P –

   d. Ag –

4. What is the identity of the element with 17 electrons?

5. What are the Quantum Numbers for the element with 17 electrons?

6. What is the identity of the element with four electrons in the third energy level?

7. List a form of electromagnetic radiation that <u>could</u> fit each description below:
   a. short wavelength
   b. very penetrating
   c. felt as heat
   d. causes sunburn
   e. high energy

8. Draw a model of the atom using the choices below:
   a. Bohr model
   b. Schrodinger model
   c. Master Plan diagram

9. List the properties of each of the following and describe where each is found on the periodic table:

a. metals –

b. nonmetals –

c. metalloids –

10. Explain the significance in terms of developing our idea of the atom os each of the following experiments:

a. Crookes tube

b. Rutherford's gold foil experiment

c. Line spectra of elements

11. Explain and give an example of each of the following principles:

a. Hund's rule

b. Pauli Exclusion Principle

c. Aufbau Principle

12. Considering the element lithium,

a. what would you have to do to an atom of this element in order to make it an ion?

b. what would you have to do to an atom of this element to make it a lithium isotope?

c. What would you have to do to turn an atom of lithium into an atom of beryllium?

13. When sodium nitrate is put into a Bunsen burner flame, it produces a yellow light. Explain what is happening on the atomic level to produce this color.

14. Use the information below to calculate the atomic mass of the element:

Mass number	Percent Abundance
107	51.35%
109	48.65%

a. Atomic Mass =

b. What is the identity of the element?