

REVIEW QUESTIONS

Chapter 4

1. Complete each question below with an appropriate term:
 - a) _____ Un-reactive elements in the last group of the periodic table.
 - b) _____ A pure substance of two or more atoms with a fixed ratio.
 - c) _____ Elements between the main group elements.
 - d) _____ Elements in group 2 of the periodic table.
 - e) _____ Another name for homogeneous mixtures.

2. Name and write symbol for each element described below:
 - a) Alkali metal in period 4: _____
 - b) Halogen in period 2: _____
 - c) Alkaline-earth metal in period 3: _____
 - d) Metalloid in period 3: _____
 - e) Noble gas in period 5: _____

3. Identify each of the following as element, compound, homogeneous mixture or heterogeneous mixture:
 - a) tap water _____
 - b) Sand on the beach _____
 - c) Aluminum foil _____
 - d) Pizza _____
 - e) Baking Soda _____

4. For each element below, use the information given to determine the number of protons, neutrons and electrons in its atom, and write shorthand notation for each.

a) Krypton (Kr) atomic number ($Z=36$); mass number ($A=84$)

$p^+ =$ _____ $n^0 =$ _____ $e^- =$ _____ Notation: _____

b) Barium (Ba) atomic number ($Z=56$); mass number ($A=137$)

$p^+ =$ _____ $n^0 =$ _____ $e^- =$ _____ Notation: _____

5. Complete the missing information in the table below:

Symbol	Ga	
Protons		15
Neutrons	39	
Electrons		
Mass number		31

6. An unknown element Q has the following isotopic data:

Isotope	Mass (amu)	Abundance (%)
1	80.0	60.0
2	84.0	30.0
3	82.0	10.0

Calculate the average atomic mass of this element.

7. Complete each statement below with a suitable word or phrase:

A) The “soccer ball” model of the atom is associate with a scientist named

B) Thomson discovered the _____ in 1897.

C) Rutherford discovered that the atom was mostly hollow through the

_____ experiment.

D) The number of protons in an atom is called the _____

E) Isotopes of an atom have the same _____ but different

8. Write an abbreviated electron configuration for lead (Pb) and answer the following questions:

a) How many electrons in this atom have $n = 6$? _____

b) How many electrons in this atom occupy f sublevel? _____

c) How many electrons in this atom occupy p sublevels? _____

9. Name the element that corresponds to each of the following:

a) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 3d^{10}$ _____

b) $[\text{Xe}] 6s^2 4f^{14} 5d^{10} 6p^3$ _____

c) $[\text{Kr}] 5s^2 4d^{10}$ _____