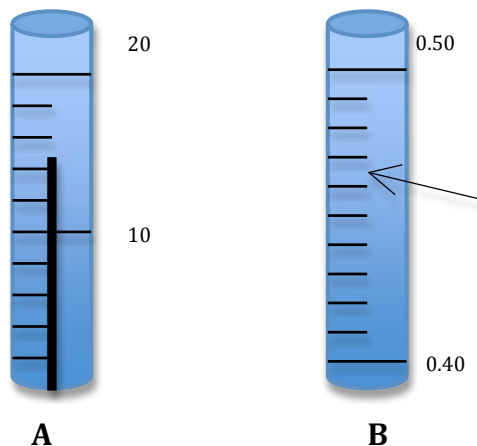






6) Evaluate the cylinders

- a) Which cylinder will provide the most precise measured value? \_\_\_\_\_
- b) Using the correct number of significant figures, what is the reading of cylinder A? \_\_\_\_\_
- c) Using the correct number of significant figures, what is the reading of cylinder B? \_\_\_\_\_



7) Which of the following atoms must exist as a diatomic molecule?

- a) Pb  
b) P  
c) C  
d) O

8) Draw a line to the value that best describes the prefix.

Micro-	$10^{-3}$
Giga-	.01
Centi-	0.000001
Kilo-	1,000,000,000
Milli-	1000

9) True/False

An exact number has a degree of uncertainty. \_\_\_\_\_

10) Convert  $15 \text{ m}^3$  to liters

a)  $1.5 \times 10^{-2} \text{ L}$

b) 1.5 L

c)  $1.5 \times 10^2 \text{ L}$

d)  $1.5 \times 10^4 \text{ L}$

11) A gold ingot weighs 5.50 lbs. If the density of gold is  $19.31 \text{ g/cm}^3$ , and the length and width of the ingot are 12.0 cm and 3.00 cm respectively, what is the height of the ingot? ( $453.6 \text{ g} = 1.00 \text{ lb}$ )

12) How many significant figures are in each of the following measure numbers?

a) 0.032 \_\_\_\_\_

b) 1.1101 \_\_\_\_\_

c) 50.0 \_\_\_\_\_

d) 766010 \_\_\_\_\_

13) Write the following in scientific notation (the underlined digit represents the significant figure cut off):

a) 0.003002 \_\_\_\_\_

b) 94560.0234 \_\_\_\_\_

14) True/False

An isotope is an atom that has the same number of protons and neutrons, but a different number of electrons.

15) A student does experiment #4 (salt/sand) just like you. Using the student's data below, calculate the percent of salt in her sample.

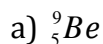
Weight of evaporating dish: 42.09 g

Weight of evaporating dish and sample: 51.46 g

Weight of evaporating dish and sand after drying: 47.86 g

16) Identify the chemical symbol of element X in  ${}_{34}^{80}\text{X}$  \_\_\_\_\_

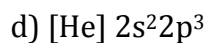
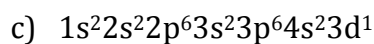
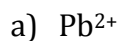
17) Boron-9 can be represented as



18) How many protons (p), neutrons (n), and electrons (e) are in one atom of  ${}^{23}_{12}\text{Mg}$

p = \_\_\_\_\_ n = \_\_\_\_\_ e = \_\_\_\_\_

19) Provide the electron configuration or the element, where applicable, for the following. Do not use a Noble gas core for this question:





27) What is the symbol for an atom having 15 protons and 18 electrons?

28) How many electrons are in  $^{45}\text{Sc}^{3+}$

29) The nucleus of F-19 contains...

30) A hypothetical element, Hy, has three isotopes, Hy-299, Hy-300, and Hy-301, which have the following natural abundance: 5.00% (Hy-299), 65.00% (Hy-300), and 30.00% (Hy-301). The atomic masses of the isotopes are 299.0 amu, 300.0 amu, and 301.0 amu, respectively. Calculate the atomic mass of Hy.

31) How many minutes will it take to drive to Los Angeles from San Francisco if an average speed of 72 mi/hr is maintained? The distance between the two cities is 405 miles.

32) What is the name of this class?