

CHM 101 EXAM I

Show all calculations with units and correct significant figures. Write in complete and clear sentences.

1. Give the chemical name for the following compounds: (10)

H_2SO_4 _____

Fe_2O_3 _____

SO_3 _____

KCl _____

$\text{Ca}_3(\text{PO}_4)_2$ _____

2. Write the formula from the names given below: (10)

lithium carbonate _____

chromium (III) nitrate _____

nitric acid _____

magnesium hydroxide _____

ammonia _____

3. Using the periodic table, complete the chart below: (15)

atom/ion	number of protons	number of neutrons	number of electrons
Mn			
S			
Cu^{+2}			

As^{-3}			
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4. List an element that has the characteristic given below: (10)

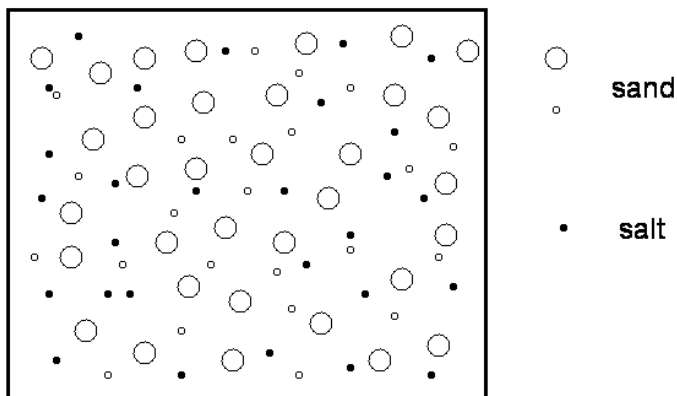
charge of +3 _____ metal _____ noble gas _____

similar properties to K _____ one more proton than potassium _____

no neutrons _____ neutrons > 100 _____

non-metal _____ diatomic _____ charge of -2 _____

5. Explain in detail how to completely separate and isolate the components of the mixture of sand and salt based on the picture of the sample given in the box. Separation by hand-picking out the grains is NOT an option. (15)



6. Convert 7.3 inches to millimeters. (1 inch = 2.54 cm) (10)

7. Quartz sand, such as at Ocean City, has a density of 2.7 g/cm^3 . What is the volume in liters of 250 kg of sand? (15)

8. Compare and contrast the two graphs of data sets given below: (15)

