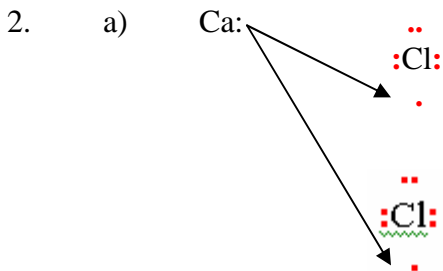
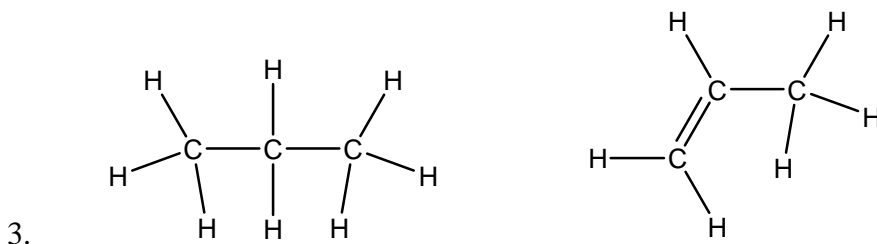
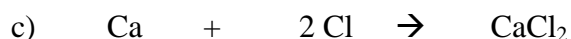


1.
  - a) Rn
  - b) alkali metal
  - c) electronegativity
  - d) Ne



b)  $[\text{Cl}^-] [\text{Ca}^{+2}] [\text{Cl}^-]$  (normally drawn with circles around the ions)



4.  $0.4889(288) + 0.3781(290) + 0.1330(295) = 289.69 \text{ amu.}$

5. Ionic compounds are usually formed by reacting a metal with a non metal. The non-metal accepts electrons from a metal. The resulting compound consists of oppositely charged ions which attract each other (forming ionic bonds) and form a geometrical pattern known as a crystal. They do not form separate molecules.

Covalent compounds do form separate molecules in which a non metal atom shares electrons with one or more nonmetals. Each pair of shared electrons is known as a covalent bond.

6.  $0.329(313) + 0.671x = 315.013$   
 $x = 316$

3 moles (316g/mole) = 948 g.

7.
  - a) 28 g/mole
  - b) 100 g/mole

- c) 68 g/mole
8.  $(\text{NH}_4)_3\text{PO}_4$
  9. +2
  10.  $1 \text{ cm}^3$  of alcohol = 0.76 g  
 $0.76 \text{ g (mole/46 g)} = 0.0165 \text{ moles}$   
 $0.0165 \text{ moles (} 6.02 \times 10^{23} \text{ molecules/mole)} = 9.95 \times 10^{21} \text{ molecules}$
  11. Convert to moles using (8/150), then apply the ratio(1/2). Answer = 0.027 moles.
  12. Convert to moles using (120/180), then apply the ratio(6/1). Finally convert moles of oxygen (which equals 4 moles) to grams of oxygen. Answer = 128 grams.
  13. 80% = 0.80  
 $0.80(1.0 \text{ g}) = 0.80 \text{ g} = 800 \text{ mg}$   
 Toxic dose =  $800 \text{ mg}/80 \text{ kg} = 10 \text{ mg/kg}$
  14. radionuclides(radioactive isotopes); inorganics(like mercury, lead, cadmium) and organics (like paint solvents, benzene(from gasoline) etc)
  15. Bioconcentration occurs when an organism concentrates a contaminant directly from its physical environment like water. Bioaccumulation occurs through the food chain.  
 As one organism eats another, if it does not excrete the contaminant at the same rate that it takes it in, the organism then becomes a filter and accumulates more and more of the contaminant.
  16.  $10^{-4.2}/10^{-5.6} = 25.1$  times more acidic
  17.  $n = CV$   
 $0.5\text{L}(0.30 \text{ moles/L}) = 0.15 \text{ moles KCl}$   
 $0.15 \text{ moles KCl (} 39.1 + 35.5 \text{ g)/mole} = 11.2 \text{ g KCl}$