

1. Name these compounds "in English" : (10 %)

- (1) NaCl; (2) LiH; (3) HCl; (4) Cu<sub>2</sub>S; (5) CCl<sub>4</sub>;  
(6) CO; (7) HNO<sub>3</sub>; (8) KMnO<sub>4</sub>; (9) NaHCO<sub>3</sub>; (10) Ba(OH)<sub>2</sub>;

2. Write the Lewis structure and formal charge for the carbonate ion : "CO<sub>3</sub><sup>2-</sup>".  
(15 %)

3. Define these following terms and give an example : (75 %)

- (1) quantum number ;  
(2) atomic number, mass number and isotopes ;  
(3) electronegativity ;  
(4) noble gases and the Octet rule ;  
(5) mole, Avogadro's number and molar mass ;  
(6) ideal gas equation ;  
(7) exothermic and endothermic process ;  
(8) the Pauli exclusion principle ;  
(9) Le Chatelier's principle ;  
(10) buffer solution ;  
(11) valence-shell electron-pair repulsion : VSEPR ;  
(12) the Arrhenius equation ;  
(13) equilibrium constant ;  
(14) the change in Gibbs free energy equation ;  
(15) the Nernst equation.