1. 由96%比重爲1.84之H_2SO_4 如何配製2N標準酸溶液1L？ (S=32, O=16, H=1) (15%)

2. What shape do you expect for each of the following molecules or ions ?
(畫出下列分子形狀並說明其結構) (每小題 5%，共 20%)
   (1) XeO_2F_2
   (2) H_3BO_3
   (3) H_2CO_3
   (4) 丙酮

3. Explain the following terms: (舉例說明下列名詞) (每小題 5%，共 25%)
   甲、osmotic pressure 或 osmosis
   乙、green house effect
   丙、London dispersion force
   丁、amino acid
   戊、isomer

4. 由分子軌域(MO)理論判斷 NO 分子的鍵數(bond order)與順磁性或逆磁性。 (10%)

5. Balance the equations for the following reactions: (每小題 10%，共 20%)
(平衡方程式)
   (a) $Cr(OH)_3(s) + ClO^-(aq) \rightarrow CrO_4^{2-}(aq) + Cl_2(g) + OH^-(aq) + H_2O(l)$
   (b) $PbO_2(s) + Pb(s) + HSO_4^-(aq) + H^+(aq) \rightarrow PbSO_4(s) + H_2O(l)$

6. Write the electron configuration for :
(寫出原子的電子組態) (每小題 5%，共 10%)
   (1) Cr
   (2) Br