

1. (40%, 每一小題 5%) 解釋下列專有名詞

1-1. Buffer solution

1-5. Analytical molarity

1-2. Nernst equation

1-6. Accuracy

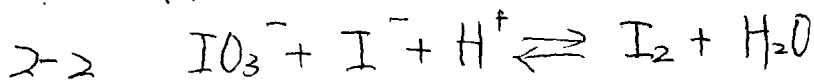
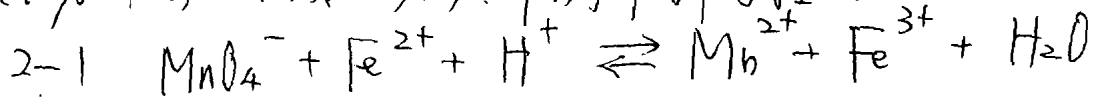
1-3. pH

1-7. Common ion effect

1-4. Activity

1-8. EDTA (全名與結構式)

2. (10%, 每一小題 5%) 平衡下列方程式



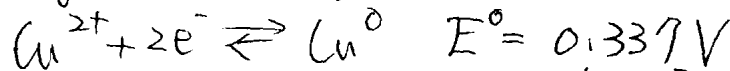
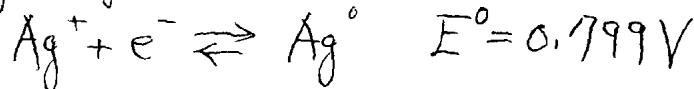
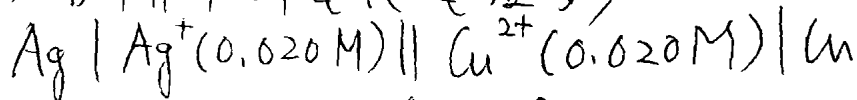
3. (10%) 計算結果的標準偏差為何?

$$\frac{[14.3(\pm 0.2) - 11.6(\pm 0.2)] \times 0.050(\pm 0.001)}{[820(\pm 10) + 1030(\pm 5)] \times 42.3(\pm 0.4)} = 1.725(\pm ?) \times 10^{-6}$$

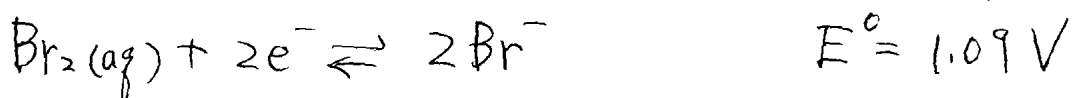
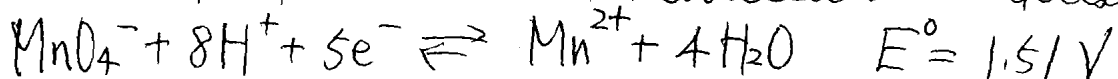
4. (10%) 請由比重 1.18 的 37% (w/w) 的 HCl (分子量 36.5 g/mol) 溶液
配製 100 mL 的 6.0 M HCl 溶液。

5. (10%) 請計算 0.100 M $NaHCO_3$ 溶液, 其 $[H_3O^+]$ 濃度多少?
 H_2CO_3 的 $K_1 = 4.45 \times 10^{-7}$, $K_2 = 4.69 \times 10^{-11}$.

6. (10%) 請計算下列電池電位多少?



7. (10%) 由下列二半反應電位, 計算全反應電位與平衡常數。



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