Correction of interrogation of Chapter I

Exercise 01

1. Mass concentration can be calculated using molar concentration, by replacing $\mathbf{m = n \times M}$ in the mass concentration relation. So, the relation becomes as follows: $C_p = C \times M$
2. Osmolar and Ionic Concentration and equivalents.

Osmolar Concentration

$$W = i \times C$$

- it is expressed in **Osm/m³ or mOsm/L**

Ionic Concentration

$$C_i = C_i^+ + C_i^- = (n^+ \alpha\, C) + (n^- \alpha\, C)$$

- it is expressed in **g ions/m³** or **grams ions/L**.

Equivalents Concentration

$$C_{eq} = C_{eq}^+ + C_{eq}^- = z^+ C_i^+ + z^- C_i^- = z^+ (n^+ \alpha\, C) + z^- (n^- \alpha\, C)$$

- it is expressed in **equivalent /m³** or **equivalent /L**. **equivalent /m³** or **equivalent /L**.

Exercise 02

Calculate the osmolarity concentration of a solution.

1. calculate the matter quantity: n=m/M

$n_{sucrose} = 0.175$ mol

$n_{urea} = 0.03$ mol

$n_{NaCl} = 0.3$ mol

2. calculate the molar concentration: C=n/V

$C_{sucrose} = 0.175$ mol/L

$C_{urea} = 0.03$ mol/L

$C_{NaCl} = 0.3$ mol/L

3. calculate the osmolarity concentration: W=i.C

$W_{sucrose} = 0.175$ osmol/L

W_{urea} = 0.3 osmol/L

W_{NaCl} = 0.03 osmol/L

4. the osmolarity concentration of a solution: $W_{solution}$= 0.805 osmol/L.