# DOSAGE OF Vitamin C

Vitamin C ($C_6H_8O_6$) can be oxidized by diiod ($I_2$):

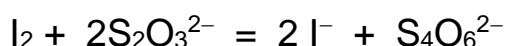$$C_6H_8O_6 + I_2 = C_6H_6O_6 + 2\,H^+ + 2\,I^-$$
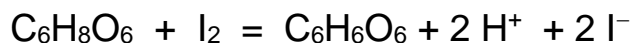
Vitamin C contained **in 10mL** of solution is mixed with a known amount of diiod in excess (**$v_1 = 20mL$ and $c_1 = 5 \times 10^{-3}\ mol.L^{-1}$**):

> Quantity introduced of **$(I_2) = c_1 \times V_1$**

The diiod in excess is dose with a solution of thiosulphate $S_2O_3^{2-}$ **($c_2 = 1 \times 10^{-2}\ mol.L^{-1}$)**

The equation of the dosage is:

$$I_2 + 2S_2O_3^{2-} = 2\,I^- + S_4O_6^{2-}$$

**$n(I_2)$ in excess** $= n(S_2O_3^{2-})/2 = $ **$(c_2 \times V_2)/2$**

Quantity of (vit.C) = quantity introduced of ($I_2$) - $n(I_2)$ in excess

Quantity of (vit.C) = $n$(vit.C) = **$c_1 \times V_1 - (c_2 \times V_2)/2$**

The mass of vitamin C is: $m(C_6H_8O_6) = n(vitC) \times M(C_6H_8O_6)$
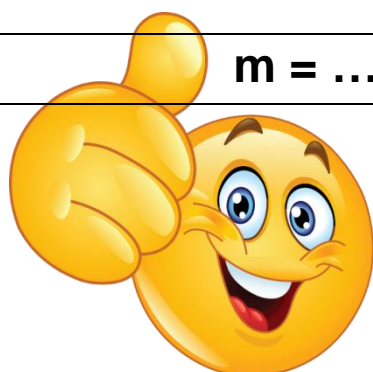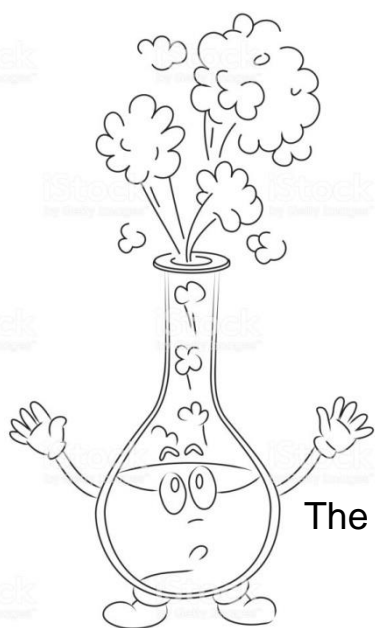
$$M(C_6H_8O_6) = 176\ g.mol^{-1}$$

To calculate the mass of vitamin C:

**$m$(vit.C) $= \left(C_1 \times V_1 - (c_2 \times V_2)/2\right) \times 176$ in 10 mL of Solution**

In one liter (1000mL) of solution, there are 100 times more of vitamin C,

So we find:

**m = ……………. in a tablet of vitamin C**

**Is it correct?**