Answer on Question #65158 - Chemistry – Organic Chemistry

Task:

What is the mass of glucose solution that fills a 0.500L intravenous bottle if the density of the glucose solution is 1.15g/mL

Solution:

$Convert\ L\ in\ mL:$

$1L = 1000mL;$

$0.500L = x\,mL;$

$$x = V(solution\ of\ glu\cos e) = \frac{0.500L \times 1000\,mL}{1L} = 500\,mL.$$

We find the mass of glucose solution by the next formula:

$$\rho(solution) = \frac{m(solution)}{V(solution)}; \quad \Rightarrow \quad m(solution) = \rho(solution) \times V(solution);$$

$Then,$

$$m(solution\ of\ glu\cos e) = 1.15\,{}^{g}\!/_{mL} \times 500\,mL = 575\,g.$$

Answer: The mass of glucose solution is 575 g.