Answer on Question #55003 - Chemistry - Other

Question:

Assume that the experiment is carried out using a salt solution for solvent and a membrane soluble to the salt. Albumin is human protein plasma with a molar mass of 69 000 g mol^{-1}. What would be the osmotic pressure of a solution of this protein containing 2.0 g per 100 mL at 25°C. Assume that the experiment is carried out using a salt solution for solvent and a membrane soluble to the salt.

$$P = CRT$$

$$T = 25 + 273$$

$$T = 293K$$

$$C = \frac{n}{V}$$

$$n = \frac{m}{M}$$

$$P = \frac{mRT}{MV}$$

$$P = \frac{2 \times 8.314 \times 298}{69000 \times 0.1}$$

$$P = 0.718 kPa$$

Answer: 0.718 kPa