Question #65482, Chemistry / Inorganic Chemistry

What is the pH of a solution of 1.111 L of 1.33M HF, Ka= 7.2 x 10^{-4}, and 1.49 moles of NaF?

Answer*:*

According to Henderson–Hasselbalch equation:

$$pH = pK_a + \log\frac{[A]}{[HA]}$$

$$[HA] = [HF] = 1.33\ M$$

$$[A] = [NaF] = \frac{1.49\ moles}{1.111\ L} = 1.34\ M$$

$$pK_a = -\log K_a$$

$$pH = -\log 7.2 \times 10^{-4} + \log\frac{1.34\ M}{1.33\ M} = 3.14 + 0 = \mathbf{3.14}$$

Answer provided by https://www.AssignmentExpert.com