Answer on Question #40589 - Chemistry – Other

Question

1. The pH of rainwater collected in a certain part of a highly industrialized area on a particular day was 4.82. What is the H+ ion concentration of the rainwater?

2. The OH- ion concentration of a blood sample is 2.5 x 10^{-7} M. What is the pH of the blood?

Answer:

1. pH equals:

$$pH = -lg\ [H^+]$$

Therefore H+ ion concentration equals:

$$[H^+] = 10^{-pH}$$
$$[H^+] = 10^{-4.82} = 1.51 \cdot 10^{-5}\ M$$

2. pOH equals:

$$pOH = -lg\ [OH^-]$$
$$pOH = -lg\ (2.5\ x\ 10^{-7}) = 6.6$$

We know that:

$$pH + pOH = 14$$

Therefore pH equals:

$$pH = 14 - pOH = 14 - 6.6 = 7.4$$

Answer: 1. H+ ion concentration of the rainwater is $1.51 \cdot 10^{-5}$ M

2. pH of the blood is 7.4