Question#47196 – Chemistry – Other

Question:

What is the normality of M/2 solution of H_3PO_4?

Answer:

The molarity is related to normality in the following way:

$C = f \times N$, where C is molarity, N is normality and f is an equivalence factor.

For H_3PO_4 the factor of equivalence is defined as

$f = \frac{1}{n}$, where n is for the number of protons H^+ resulted from the dissociation of H_3PO_4.

$H_3PO_4 = 3H^+ + PO_4^{3-}$

n = 3, therefore:

$$f = \frac{1}{n} = \frac{1}{3};$$
$$N = \frac{C}{f} = \frac{0.5M}{1/3} = 3 \times 0.5M = 1.5M$$