

Q.] HX is a weak acid ($K_a = 10^{-5}$). It forms a salt NaX (0.1M) on reacting with Caustic potash soda. The degree of hydrolysis of NaX is :

- (a) 0.1% (b) 0.0001% (c) 0.1% (d) 0.5%

$$K_h(X^-) = \frac{K_w}{K_a} = \frac{10^{-14}}{10^{-5}} = 10^{-9}$$

$$\Rightarrow \alpha = \sqrt{\frac{K_h}{C}} = \sqrt{\frac{10^{-9}}{0.1}} = 10^{-4}$$

$$\therefore \text{ \% of hydrolysis} = 100\alpha = 0.01\%$$