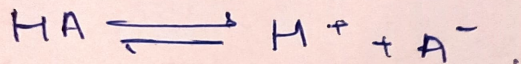


Q] The conc. of  $H^+$  ion is  $0.1 \text{ M}$  soln of a weak acid is  $1 \times 10^{-5} \text{ mol l}^{-1}$ . Calculate the diss. const of the acid.



at  $t=0$

$0.1$

$0 \quad 0$

at  $t$

$0.1 - 1 \times 10^{-5}$

$1 \times 10^{-5} \quad 10^{-5}$

$[HA]$  can be taken as  $0.1 \text{ M}$  as  $1 \times 10^{-5}$  is very small.

$$K_a = \frac{[H^+][A^-]}{[HA]} = \frac{10^{-5} \times 10^{-5}}{0.1}$$

$$= \boxed{10^{-9}} \quad \underline{\underline{\text{Ans}}}$$