Calculate the pH of a solution formed by mixing equal volumes of two solutions A and B of a strong acid having pH = 6 and pH = 4 respectively.

Sol: pH of solution A = 6

$[H^+] = 10^{-6}$ mol L^{-1}

pH of solution B = 4

$[H^+] = 10^{-4}$ molL^{-1}

On mixing one litre of each solution Total volume = 1 L + 1 L = 2 L

Total amount of H^+ in 2 L solution formed by mixing solutions A and B = 10^{-6} + 10^{-4} mol