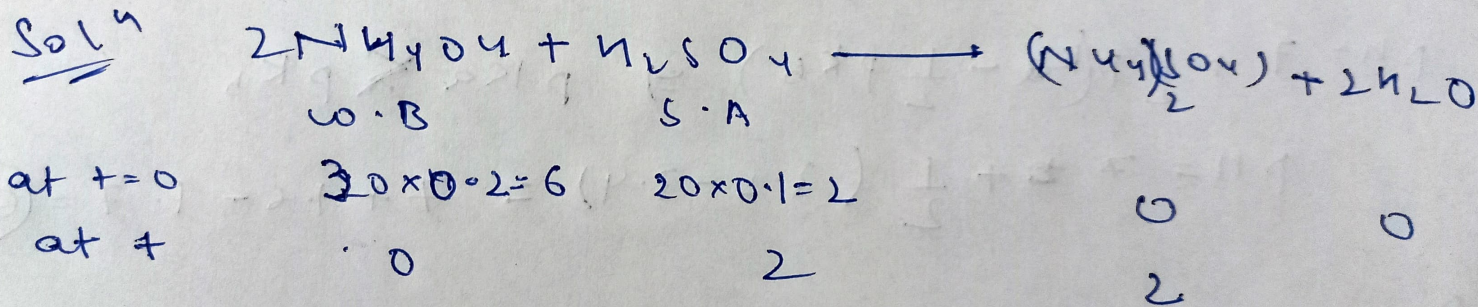


Q. 20ml of 0.1 M H_2SO_4 solⁿ added to 20ml of 0.2 M NH_4OH solⁿ. The pH of resultant mixture is [pK_b of $\text{NH}_4\text{OH} = 4.7$] (JEE 2019)

- (a) 9.3 (b) 5.0 (c) 9.0 (d) 5.2 -



So it will be basic buffer.

$$\text{eq}^n \Rightarrow \text{pOH} = \text{pK}_b + \log \frac{[\text{NH}_4]_2 \text{SO}_4}{[\text{NH}_4\text{OH}]}$$

$$= 4.7 + \log \frac{2}{2} = (4.7)$$

$$\text{pH} = 14 - \text{pOH} = 14 - 4.7 = \boxed{9.3} \quad \underline{\text{Ans}}$$