

## Yakeen NEET 2.0 2026

## Physical Chemistry By Amit Mahajan Sir

DPP: 3

## Ionic Equilibrium

- Q1** 4.0 g of NaOH and 4.9 g of  $\text{H}_2\text{SO}_4$  are dissolved in water and volume is made upto 250ml. The pH of this solution is  
(A) 7 (B) 1  
(C) 2 (D) 12
- Q2** The pH of two solutions are 5 and 3 respectively. What will be the pH of the solution made by mixing the equal volumes of the above solutions  
(A) 3.5 (B) 4.5  
(C) 3.3 (D) 4.0
- Q3** The pH of the solution obtained by mixing 10 mL of 0.1M HCl and 10 mL of 0.1M NaOH is:  
(A) 8 (B) 2  
(C) 7 (D) none of these
- Q4** The pH of a solution is 2. Its pH is to be changed to 4. Then the  $\text{H}^+$  concentration of original solution has to be:  
(A) Halved  
(B) Doubled  
(C) Increased by 100 times  
(D) Decreased by 100 times
- Q5** How many moles of HCl must be removed from 1 litre of aqueous HCl solution to change its pH from 2 to 3  
(A) 1 (B) 0.02  
(C) 0.009 (D) 0.01
- Q6** The concentration of a HCl solution is  $10^{-2}\text{M}$ . If this solution is diluted ten times then its pH will  
(A) Become ten times  
(B) Become double  
(C) Increase by one unit  
(D) Decrease by one unit
- Q7** 1 cc of 0.1 N HCl is added to 99 cc solution of NaCl. The pH of the resulting solution will be  
(A) 7 (B) 3  
(C) 4 (D) 1
- Q8** pH of solution is 4. The hydroxide ion concentration of the solution would be  
(A)  $10^{-4}$  (B)  $10^{-10}$   
(C)  $10^{-2}$  (D)  $10^{-12}$
- Q9** 100 mL of 0.2 M  $\text{H}_2\text{SO}_4$  is added to 100 mL of 0.2 M NaOH. The resulting solution will be;  
(A) Acidic (B) Basic  
(C) Neutral (D) Slightly basic
- Q10** pH of a solution can be expressed as  
(A)  $-\log_e [\text{H}^+]$   
(B)  $-\log_{10} [\text{H}^+]$   
(C)  $\log_e [\text{H}^+]$   
(D)  $\log_{10} [\text{H}^+]$
- Q11** An alcoholic drink substance has pH = 4.7 then  $\text{OH}^-$  ion concentration of this solution is ( $K_w = 10^{-14} \text{ mol}^2/\text{l}^2$ )



- (A)  $3 \times 10^{-10}$
- (B)  $5 \times 10^{-10}$
- (C)  $1 \times 10^{-10}$
- (D)  $5 \times 10^{-8}$

**Q12** Equal volumes of three acid solutions of pH 3, 4 and 5 are mixed in a vessel. What will be the  $H^+$  ion concentration in the mixture?

- (A)  $1.11 \times 10^{-4} M$
- (B)  $3.7 \times 10^{-4} M$
- (C)  $3.7 \times 10^{-3} M$
- (D)  $1.11 \times 10^{-3} M$

**Q13** Aqueous solution of which salt has the lowest pH?

- (A) NaOH
- (B)  $NH_4Cl$
- (C)  $Na_2CO_3$
- (D) NaCl



## Answer Key

Q1 (A)  
Q2 (C)  
Q3 (C)  
Q4 (D)  
Q5 (C)  
Q6 (C)  
Q7 (B)

Q8 (B)  
Q9 (A)  
Q10 (B)  
Q11 (B)  
Q12 (B)  
Q13 (B)



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