

## Yakeen NEET 2.0 2026

## Physical Chemistry By Amit Mahajan Sir

DPP: 1

## Ionic Equilibrium

**Q1** The concept that acid is proton donor and base is proton acceptor was given by

- (A) Arrhenius (B) Lowry-Bronsted  
(C) Lewis (D) Faraday

**Q2** Conjugate base of  $\text{HCO}_3^-$  is

- (A)  $\text{H}_2\text{CO}_3$   
(B)  $\text{CO}_2$   
(C)  $\text{H}_2\text{O}$   
(D)  $\text{CO}_3^{2-}$

**Q3** The conjugate acid of  $\text{NH}_2^-$  is

- (A)  $\text{NH}_3$   
(B)  $\text{NH}_4^+$   
(C)  $\text{N}_2\text{H}_4$   
(D)  $\text{NH}_2\text{OH}$

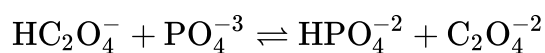
**Q4** Which one of the following can act as Bronsted acid as well as Bronsted base?

- (A)  $\text{CH}_3\text{COO}^-$   
(B)  $\text{CO}_3^{2-}$   
(C)  $\text{HPO}_4^{2-}$   
(D)  $\text{SO}_4^{2-}$

**Q5** Which of the following can act both as Bronsted acid and Bronsted Base?

- (A)  $\text{Cl}^-$   
(B)  $\text{HSO}_4^-$   
(C)  $\text{H}_3\text{O}^+$   
(D)  $\text{OH}^-$

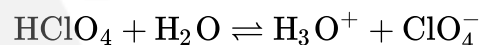
**Q6** In the following reaction



Which are the two Bronsted bases?

- (A)  $\text{HC}_2\text{O}_4^-$  and  $\text{PO}_4^{3-}$   
(B)  $\text{HPO}_4^{2-}$  and  $\text{C}_2\text{O}_4^{2-}$   
(C)  $\text{PO}_4^{3-}$  and  $\text{C}_2\text{O}_4^{2-}$   
(D)  $\text{HC}_2\text{O}_4^-$  and  $\text{HPO}_4^{2-}$

**Q7** Observe the following equilibrium and choose the correct statement.



- (A)  $\text{HClO}_4$  is conjugate acid of  $\text{H}_2\text{O}$   
(B)  $\text{H}_3\text{O}^+$  is conjugate base of  $\text{H}_2\text{O}$   
(C)  $\text{H}_2\text{O}$  is conjugate acid of  $\text{H}_3\text{O}^+$   
(D)  $\text{ClO}_4^-$  is conjugate base of  $\text{HClO}_4$

**Q8** Dissociation constant for a weak acid HA may be given as -

- (A)  $K_a = \frac{\alpha \cdot c}{(1-\alpha)c}$   
(B)  $K_a = \frac{\alpha^2 \cdot c}{(1-\alpha)}$   
(C)  $K_a = \left( \frac{\alpha^2}{(1-\alpha)} \cdot c \right)^2$   
(D)  $K_a = \frac{\alpha^2 \cdot c}{1-\alpha^2}$

**Q9** A monoprotic acid in a 0.1M solution ionizes to 0.001%. Its ionisation constant is

- (A)  $1.0 \times 10^{-3}$   
(B)  $1.0 \times 10^{-6}$   
(C)  $1.0 \times 10^{-8}$   
(D)  $1.0 \times 10^{-11}$



## Answer Key

Q1 (B)

Q2 (D)

Q3 (A)

Q4 (C)

Q5 (B)

Q6 (C)

Q7 (D)

Q8 (B)

Q9 (D)



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