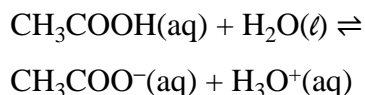


Alternate Acid Base Theories

1 According to one acid-base theory, a base is an

- (1) H₂ acceptor (3) H⁺ acceptor
 (2) H₂ donor (4) H⁺ donor

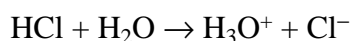
2 Given the equation representing a reversible reaction:



According to one acid-base theory, the two H⁺ donors in the equation are

- (1) CH₃COOH and H₂O
 (2) CH₃COOH and H₃O⁺
 (3) CH₃COO⁻ and H₂O
 (4) CH₃COO⁻ and H₃O⁺

3 Given the balanced equation representing a reaction:



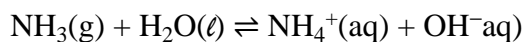
The water molecule acts as a base because it

- (1) donates an H⁺ (3) donates an OH⁻
 (2) accepts an H⁺ (4) accepts an OH⁻

4 According to one acid-base theory, a molecule acts as an acid when the molecule

- (1) accepts an H⁺ (3) donates an H⁺
 (2) accepts an OH⁻ (4) donates an OH⁻

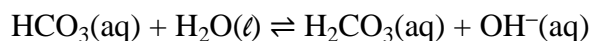
5 Given the equation representing a reaction at equilibrium:



If an acid is defined as an H⁺ donor, what is the acid in the forward reaction?

- (1) OH⁻(aq) (3) NH₃(g)
 (2) H₂O(ℓ) (4) NH₄⁺(aq)

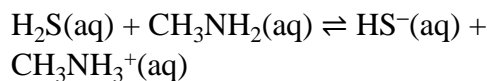
6 Given the equation representing a reversible reaction:



Which formula represents the H⁺ acceptor in the forward reaction?

- (1) HCO₃(aq) (3) H₂CO₃(aq)
 (2) H₂O(ℓ) (4) OH⁻(aq)

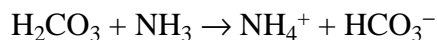
7 Given the equation representing a reaction at equilibrium:



According to one acid-base theory, the forward reaction is classified as an acid-base reaction because

- (1) H₂S is a H⁺ donor and CH₃NH₂ is a H⁺ acceptor
 (2) CH₃NH₂ is a H⁺ donor and H₂S is a H⁺ acceptor + are both H⁺ donors
 (3) HS⁻ and CH₃NH₃⁺ and HS⁻ are both H⁺ acceptors
 (4) CH₃NH₃

8 Given the equation representing a reaction:



According to one acid-base theory, the compound NH₃ acts as a base because it

- (1) accepts a hydrogen ion
 (2) donates a hydrogen ion
 (3) accepts a hydroxide ion
 (4) donates a hydroxide ion

9 One acid-base theory defines an acid as an

- (1) H⁻ acceptor (3) H⁺ acceptor
 (2) H⁻ donor (4) H⁺ donor

10 According to one acid-base theory, NH₃ acts as a base when an NH₃ molecule

- (1) accepts an H⁺ ion (3) accepts an OH⁻ ion
 (2) donates an H⁺ ion (4) donates an OH⁻ ion

11 According to one acid-base theory, water can act as a base because a water molecule can

- (1) donate an H^+ ion (3) donate an H^- ion
 (2) accept an H^+ ion (4) accept an H^- ion

12 According to one acid-base theory, a water molecule acts as a base when it accepts

- (1) an H^+ ion (3) a neutron
 (2) an OH^- ion (4) an electron

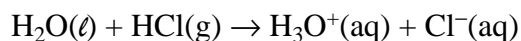
13 According to one acid-base theory, a water molecule acts as an acid when the molecule

- (1) donates an H^+ ion (3) donates an OH^- ion
 (2) accepts an H^+ ion (4) accepts an OH^- ion

14 Which statement describes one acid-base theory?

- (1) An acid is an H^+ acceptor, and a base is an H^+ donor.
 (2) An acid is an H^+ donor, and a base is an H^+ acceptor.
 (3) An acid is an H^- acceptor, and a base is an H^- donor.
 (4) An acid is an H^- donor, and a base is an H^- acceptor.

15 Given the balanced equation representing a reaction:



According to one acid-base theory, the $H_2O(\ell)$ molecules

- (1) accept H^+ ions (3) donate H^+ ions
 (2) accept OH^- ions (4) donate OH^- ions

Answer Keys

1 3

2 2

3 2

4 3

5 2

6 1

7 1

8 1

9 4

10 1

11 2

12 1

13 1

14 2

15 1