Weak Bases Quiz PDF

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In the reaction of a weak base with water, what is formed?

- ◯ Only OH^- ions
- ◯ Only H^+ ions
- ◯ BH^+ and OH^- ions
- ◯ Only BH^+ ions

In which scenarios would you find weak bases being used? (Select all that apply)

- ☐ Buffer solutions
- ☐ Strong acid neutralization
- ☐ Cleaning agents
- ☐ Biological systems

Which of the following are true about the pH calculation of weak bases? (Select all that apply)

- ☐ pH = 14 - pOH
- ☐ Requires K b value
- ☐ Directly measured by pH meter
- ☐ Involves calculating pOH first

Which of the following are weak bases? (Select all that apply)

- ☐ Ammonia (NH_3)
- ☐ Sodium hydroxide (NaOH)
- ☐ Aniline ($C_6H_5NH_2$)
- ☐ Potassium hydroxide (KOH)

Which of the following statements about weak bases are true? (Select all that apply)

- ☐ They have a high K b value.
- ☐ They establish an equilibrium in solution.

- [ ] They are fully ionized in water.
- [ ] They can act as buffers.

What are the characteristics of weak bases? (Select all that apply)

- [ ] High pH
- [ ] Partial ionization
- [ ] Strong electrolyte
- [ ] Forms a buffer with its salt

What is the relationship between K b and K a for a conjugate acid-base pair?

- ◯ K b = K a
- ◯ K b × K a = K w
- ◯ K b + K a = 1
- ◯ K b - K a = 0

Which of the following best describes the pH of a solution containing a weak base?

- ◯ Exactly 7
- ◯ Less than 7
- ◯ Greater than 7
- ◯ Exactly 14

Which of the following weak bases is commonly used in pharmaceuticals?

- ◯ Sodium bicarbonate
- ◯ Methylamine
- ◯ Potassium hydroxide
- ◯ Calcium carbonate

What is a characteristic of a weak base?

- ◯ Completly dissociates in water
- ◯ Partially dissociates in water
- ◯ Does not dissociate in water
- ◯ Forms a strong acid

Which factor does NOT affect the strength of a weak base?

- ◯ Temperature
- ◯ Concentration
- ◯ Pressure
- ◯ Common ion effect

Which of the following is an example of a weak base?

- ◯ Sodium hydroxide (NaOH)
- ◯ Ammonia (NH_3)
- ◯ Hydrochloric acid (HCl)
- ◯ Sulfuric acid (H_2SO_4)

What does the equilibrium constant (Kb) represent for a weak base?

- ◯ The rate of reaction
- ◯ The extent of dissociation
- ◯ The color change in a reaction
- ◯ The temperature of the solution

Outline the steps involved in calculating the pH of a solution containing a weak base.

How does the common ion effect influence the equilibrium of a weak base in solution?

Discuss the significance of the equilibrium constant (K b) in determining the strength of a weak base.

Provide an example of a weak base used in a biological system and explain its function.

Explain why weak bases do not completely dissociate in water.

Describe the role of weak bases in buffer solutions and how they help maintain pH stability.

What are the effects of the common ion on weak bases? (Select all that apply)

- [ ] Shifts equilibrium position
- [ ] Increases ionization

- [ ] Decreases ionization
- [ ] Affects pH