

## Weak Acids Quiz PDF

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#### Which weak acid is commonly found in citrus fruits?

- Hydrochloric acid
- Formic acid
- Citric acid
- Acetic acid

#### What are the characteristics of buffer solutions containing weak acids? (Select all that apply)

- They resist changes in pH
- They are made with strong acids
- They contain a weak acid and its conjugate base
- They can only be used in laboratory settings

#### Which of the following is NOT a use of weak acids?

- Food preservation
- Industrial cleaning
- Explosive manufacturing
- pH buffering in biological systems

#### Which of the following is a characteristic of weak acids?

- Complete dissociation in water
- Low degree of ionization
- High pH value
- Strong electrolyte

#### What is the main component of vinegar?

- Citric acid
- Hydrochloric acid

- Acetic acid
- Sulfuric acid

**What factors affect the strength of a weak acid? (Select all that apply)**

- Temperature
- Concentration of the acid
- Acid dissociation constant ( $K_a$ )
- Color of the acid

**Which statements are true about the equilibrium of weak acids in solution? (Select all that apply)**

- It involves complete dissociation of the acid
- It establishes a balance between undissociated acid and ions
- It is represented by the  $K_a$  value
- It results in a pH of exactly 7

**Which of the following is true about the  $pK_a$  of a weak acid?**

- It is always greater than 7
- It indicates the acid's color
- It is the pH at which half of the acid is dissociated
- It is unrelated to the acid's strength

**Which of the following are examples of weak acids? (Select all that apply)**

- Hydrochloric acid (HCl)
- Acetic acid ( $CH_3COOH$ )
- Carbonic acid ( $H_2CO_3$ )
- Citric acid ( $C_6H_8O_7$ )

**In which of the following applications are weak acids used? (Select all that apply)**

- Food preservation
- pH buffering in biological systems
- Explosive manufacturing
- Cleaning agents

**Which of the following acids is considered a weak acid?**

- Hydrochloric acid (HCl)
- Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>)
- Acetic acid (CH<sub>3</sub>COOH)
- Nitric acid (HNO<sub>3</sub>)

**What is the pH range typically associated with weak acids?**

- 0 to 2
- 2 to 4
- 4 to 7
- 7 to 14

**What does the acid dissociation constant (K<sub>a</sub>) indicate about a weak acid?**

- Its molecular weight
- Its solubility in water
- Its strength
- Its color

**Describe the role of weak acids in biological systems.**

**Discuss the industrial applications of weak acids and their importance.**

**Explain why weak acids do not completely dissociate in water.**

**Which reactions involve weak acids? (Select all that apply)**

- Neutralization with bases
- Formation of buffer solutions
- Complete dissociation in water
- Reaction with metals to produce hydrogen gas

**How does the Henderson-Hasselbalch equation help in calculating the pH of a buffer solution?**

**What is the significance of the acid dissociation constant ( $K_a$ ) in determining the strength of a weak acid?**

**How does the concept of percent ionization relate to the strength of a weak acid?**

