

## CHEMISTRY 12 IV.4-IV.6

Name:

## Take Home Quiz

1. Which of the following is correct if the four solutions listed are compared to one another?

	Concentration	Relative Conductivity	Ionization
A. strong acid	0.50 M	Highest	Complete
B. weak acid	0.50 M	Lowest	Complete
C. strong base	1.0 M	Highest	Complete
D. weak base	1.0 M	lowest	Complete

2. Which of the following best describes a weak acid?

- A. Its 0.10 M solution will have a pH = 1.00
- B. It may be very soluble, but only partly ionized
- C. It must be very soluble and completely ionized
- D. It must be of low solubility and completely ionized

3. Which of the following 0.1 M solutions will have the greatest electrical conductivity?

- A. HNO<sub>2</sub>
- B. H<sub>2</sub>SO<sub>3</sub>
- C. H<sub>3</sub>PO<sub>4</sub>
- D. C<sub>6</sub>H<sub>5</sub>OH

4. What is the main difference between a strong acid and a weak acid?

- A. Their degree of ionization
- B. Their reactivity with platinum
- C. Their concentration in solution
- D. Their effect on phenolphthalein

5. In which of the following is HSO<sub>3</sub><sup>-</sup> acting as a Bronsted-Lowry acid?

- A.  $\text{HSO}_3^- + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_3 + \text{OH}^-$
- B.  $\text{NH}_3 + \text{HSO}_3^- \rightarrow \text{HN}_4^+ + \text{SO}_3^{2-}$
- C.  $\text{HSO}_3^- + \text{HPO}_4^{2-} \rightarrow \text{H}_2\text{SO}_3 + \text{PO}_4^{3-}$
- D.  $\text{H}_2\text{C}_2\text{O}_4 + \text{HSO}_3^- \rightarrow \text{HC}_2\text{O}_4^- + \text{H}_2\text{SO}_3$

6. What is the conjugate acid of the base HAsO<sub>4</sub><sup>2-</sup>?

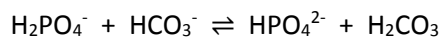
- A. AsO<sub>4</sub><sup>3-</sup>
- B. H<sub>2</sub>AsO<sub>4</sub><sup>2-</sup>
- C. H<sub>2</sub>AsO<sub>4</sub><sup>-</sup>
- D. H<sub>3</sub>AsO<sub>4</sub>

7. Consider the following reaction:  $\text{HCN} + \text{CH}_3\text{NH}_2 \rightleftharpoons \text{CN}^- + \text{CH}_3\text{NH}_3^+$

Which of the following describes a conjugate acid-base pair in the equilibrium above?

	<b>Acid</b>	<b>Base</b>
A.	$\text{CN}^-$	$\text{HCN}$
B.	$\text{CH}_3\text{NH}_3^+$	$\text{CN}^-$
C.	$\text{HCN}$	$\text{CH}_3\text{NH}_3^+$
D.	$\text{CH}_3\text{NH}_3^+$	$\text{CH}_3\text{NH}_2$

8. Identify the two conjugate pairs in the equilibrium provided.



	<b>Pair 1</b>	<b>Pair 2</b>
A.	$\text{H}_2\text{PO}_4^- / \text{H}_2\text{CO}_3$	$\text{HCO}_3^- / \text{HPO}_4^{2-}$
B.	$\text{H}_2\text{PO}_4^- / \text{HPO}_4^{2-}$	$\text{HCO}_3^- / \text{H}_2\text{CO}_3$
C.	$\text{HCO}_3^- / \text{HPO}_4^{2-}$	$\text{H}_2\text{PO}_4^- / \text{H}_2\text{CO}_3$
D.	$\text{H}_2\text{PO}_4^- / \text{HCO}_3^-$	$\text{HPO}_4^{2-} / \text{H}_2\text{CO}_3$