

## Acid/Base Balance Quiz

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- 1. The only way the body can get rid of the huge acid load produced by metabolic reactions is to**
  - a. increase the concentration of bicarbonate ions
  - b. breathe faster and more deeply
  - c. excrete hydrogen ions in the urine
  - d. increase the concentration of proteins in the plasma
  
- 2. The falling blood pH and a rising partial pressure of CO<sub>2</sub> due to pneumonia or emphysema indicates**
  - a. respiratory acidosis
  - b. respiratory alkalosis
  - c. metabolic acidosis
  - d. metabolic alkalosis
  
- 3. Hydrogen ions are normally eliminated from the body**
  - a. by excretion in urine
  - b. via insensible perspiration
  - c. in expired air
  - d. via liver detoxification
  
- 4. Which of the following would serve to buffer H<sup>+</sup>?**
  - a. any strong acid
  - b. any weak acid
  - c. HCO<sub>3</sub><sup>+</sup>
  - d. NaH<sub>2</sub>PO<sub>4</sub>
  
- 5. A blood pH of 7.1 is said to be:**
  - a. neutral
  - b. alkaline
  - c. acidic
  - d. homeostatic
  
- 6. As ventilation increases and more carbon dioxide is removed from the blood,**
  - a. pCO<sub>2</sub> will increase
  - b. hydrogen ion concentration of the blood will decrease
  - c. blood pH will decrease
  - d. hydrogen ion concentration of the blood will decrease

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7. **If the pH of blood plasma becomes 7.49 due to ingested substances, ALL of the following would happen to compensate EXCEPT**
- respiration rate decreases
  - the kidney increases secretion of bicarbonate ions
  - tubule cells produce more ammonia from glutamate
  - the partial pressure of carbon dioxide in blood would begin to rise
8. **To compensate for metabolic acidosis, the body will**
- excrete more bicarbonate ions
  - increase respiration rate
  - decrease respiration rate
  - excrete more monohydrogen phosphate ions
9. **In a patient with severely compromised lung function, which is most likely to stimulate the respiratory center in the medulla?**
- low  $\text{PaCO}_2$
  - high  $\text{PaCO}_2$
  - low  $\text{PaO}_2$
  - high  $\text{PaO}_2$
10. **The maintenance of the proper pH of the body fluids may be the result of**
- the control of respiratory ventilation
  - the operation of the various buffer systems in the stomach
  - the active secretion of  $\text{OH}^-$  into the filtrate by the kidney tubule cells
  - control of acids produced in the stomach
11. **Receptors that detect changes in  $\text{PaCO}_2$  are called:**
- chemoreceptors
  - nocireceptors
  - pH receptors
  - osmoreceptors
12. **Hyperventilation (breathing in and out more air than normal) during a panic attack causes an increase in blood \_\_\_\_\_.**
- partial pressure of  $\text{CO}_2$  and  $\text{H}^+$
  - pH
  - $\text{H}^+$
  - partial pressure of  $\text{CO}_2$

## Answers

1. c
2. a
3. a
4. c
5. c
6. b
7. c
8. b
9. c
10. a
11. a
12. b