1. List the three important buffer systems in the body:
   a. 
   b. 
   c. 

2. Write the equation showing the relationship of CO$_2$ and H$_2$O levels with bicarbonate and hydrogen ion levels:
   \[
   \text{CO}_2 + \text{H}_2\text{O} \leftrightarrow \underline{} \leftrightarrow \underline{}
   \]

3. A decrease in respiration will result in _____ CO$_2$ and will shift the equation to the _______, resulting in an increase in ____ ions, making the plasma more ______.

4. When body pH is decreased, what are the three compensatory renal mechanisms to restore pH?
   a. 
   b. 
   c. 

5. a. Normal arterial pH is _______ to ________.
   b. What is the pH in alkalosis? ________________
   c. What is the pH in acidosis? ________________

6. With ketoacidosis, show what happens to the following:
   a. _____ Plasma pH
   b. _____ (Left or right) shift of the carbonic acid/bicarbonate system
   c. _____ Bicarbonate levels
   d. _____ Respiratory rate
   e. _____ Renal excretion of H+

7. With metabolic alkalosis, show what happens to the following:
a. ______ Plasma pH

b. ______ (Left or right) shift

c. ______ Bicarbonate levels

d. ______ Respiratory rate

e. ______ Renal excretion of bicarbonate

8. With respiratory acidosis, show what happens to the following:

a. ______ Plasma pH

b. ______ (Left or right) shift

c. ______ Respiratory rate

d. ______ Renal excretion of bicarbonate

e. ______ Renal excretion of H+

9. With respiratory alkalosis, show what happens to the following:

a. ______ Plasma pH

b. ______ (Left or right) shift

c. ______ Respiratory rate

d. ______ Renal excretion of bicarbonate

e. ______ Renal excretion of H+