

Chem 1124 Practice Exam 3.

(1)(4 points) Classify the following as a solution, suspension, or a colloid

- (a) Kool Aid™
- (b) toothpaste
- (c) vegetable stew
- (d) Italian Dressing

(2) (4 points) What is a supersaturated solution? How can it exist?

(3) (4 points) A cup of saturated sugar water at 25 °C is removed and heated to 75 °C. Is the solution still saturated? Explain why or why not.

(4) (4 points) Why are strong acids strong electrolytes while weak acids are weak electrolytes?

(5) (4 points) A 1.00 L solution contains 175 g of NaCl.

(a) What is the concentration in molarity?

(b) What is the concentration in mM?

(c) What is the concentration in m/v %?

(6) (4 points) Why is it bad for cells to be immersed in solutions that are either hypotonic or hypertonic?

(7) (4 points) Define the following:

(a) Brønsted-Lowry Acid:

(b) Brønsted-Lowry Base:

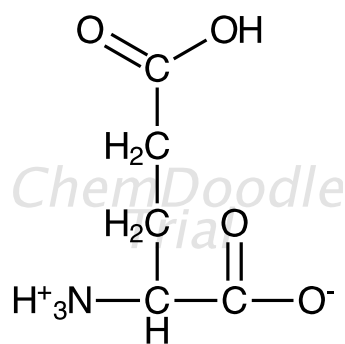
(8) (4 points) What is the pH of the following solutions:

(a) 0.100 M HCl

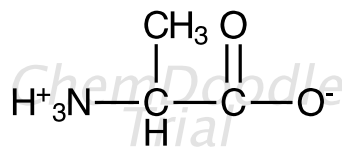
(b) 0.100 NaOH

(9) (4 points) How does a buffer resist changes in pH?

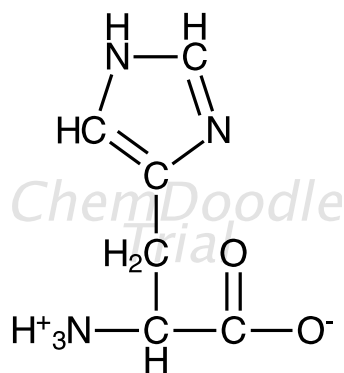
(10) (4 points) Label the following amino acids as nonpolar, basic, or acidic (ignore the chemdoodle logo and address).



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(11) (4 points) What is the difference between primary, secondary, tertiary, and quaternary structure of proteins?

(12) (4 points) What do enzymes do and how do they do it? What are two different models of enzyme action and how do they differ?

(13) (4 points) What are some factors that affect enzyme action?

(14) (4 points) How do changes in pH affect enzymes? Why?