

## Remote Learning Packet

*NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.*

**April 20 - 24, 2020**

**Course:** 10 Chemistry

**Teacher(s):** Ms. Oostindie [megan.oostindie@greatheartsirving.org](mailto:megan.oostindie@greatheartsirving.org)

### Weekly Plan:

Monday, April 20

- Read pp. 301-302
- Complete Acid-Base Reactions Equilibria worksheet

Tuesday, April 21

- Read and record notes for sections 10.6-10.7 (pp. 303-305)
- Answer questions related to dissociation constants in notes

Wednesday, April 22

- Complete and grade practice problems: p. 327 #47, 61, 62

Thursday, April 23

- Read and record notes for section 10.8 (pp. 306-307)
- Answer questions related to pH in notes

Friday, April 24

- Read and record notes for section 10.9 (pp. 308-310)
- Complete and grade practice problems: p. 328 #64, 65, 70

### Statement of Academic Honesty

I affirm that the work completed from the packet is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my child completed this work independently

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Student Signature

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Parent Signature

## Monday, April 20

Re-read page 301 and read the application section on page 302. Note you will need to follow the in-text reference to 10.14 “Reaction of Acids with Bicarbonate and Carbonate Ion” to read more about antacids. Using the information you just read, complete the attached Acid-Base Equilibria worksheet.

## Tuesday, April 21

Read and record notes for sections 10.6-10.7 (pp. 303-305). Take notes of the key vocabulary terms and their definitions as well as any diagrams, equations, and worked examples. Do not answer the questions in yellow boxes. Notes can be taken in a notebook or on separate paper.

Answer the following questions related to the sections in complete sentences at the end of your notes.

1. Describe the similarities and differences between  $K_a$  and  $K_w$ .
2. In an aqueous solution, if the concentration of  $\text{OH}^-$  is high what must be true about the concentration of  $\text{H}_3\text{O}^+$ ?
3. Which concentration value would be higher when solving for the  $K_a$  of a strong acid,  $[\text{A}^-]$  or  $[\text{HA}]$ ? Why?

## Wednesday, April 22

Complete practice problems: p. 327 #47, 61, 62. Clearly label each response with the question number and letter. After you have attempted all questions, use the attached answer key and grade your assignment in a different color pen. Not all questions will be self-graded; some answers have been deliberately omitted from the key for grading once your packet has been turned in.

## Thursday, April 23

Read and record notes for section 10.8 (pp. 306-307). Follow the same directions for note taking as listed under Tuesday’s lesson.

Answer the following questions related to the sections in complete sentences at the end of your notes.

1. What does the letter p signify?
2. How much more acidic is a solution with a pH value of 4 than a solution with a pH value of 5?
3. As acidity increases, what is the effect on the pH value?

## Friday, April 24

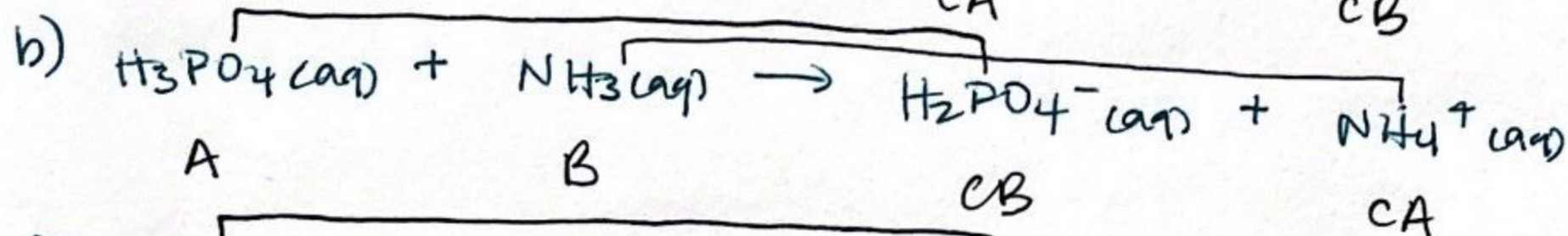
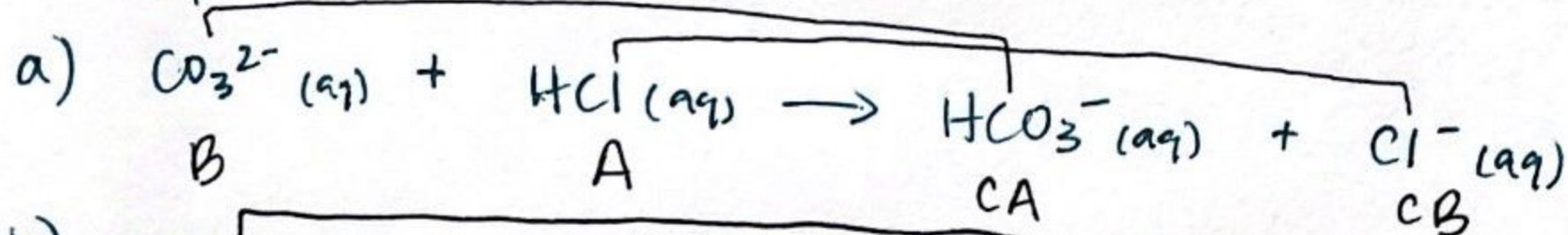
Read and record notes for section 10.9 (pp. 308-310). Follow the same directions for note taking as listed under Tuesday’s lesson.

Complete practice problems: p. 328 #64, 65, 70. After you have attempted all questions, use the attached answer key and grade your assignment in a different color pen. Not all questions will be self-graded; some answers have been deliberately omitted from the key for grading once your packet has been turned in.

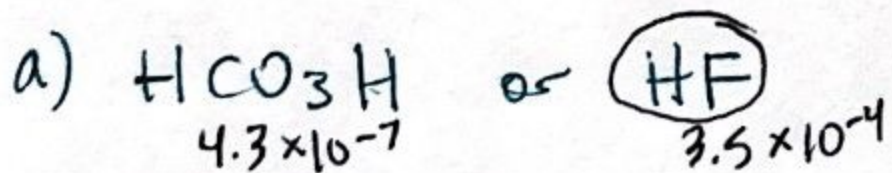
If you are unsure of how to calculate pH using your calculator, see the attached images of where to find the log and antilog functions on the most commonly owned calculators.



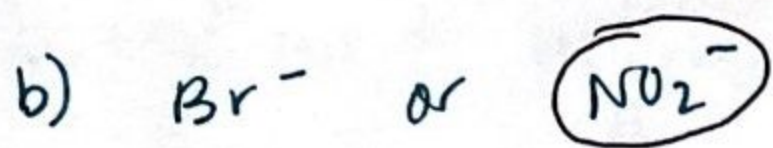
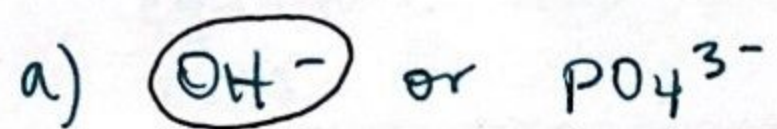
47. Label the Brønsted-Lowry acids and bases in the following equations, and tell which substances are conjugate acid-base pairs.

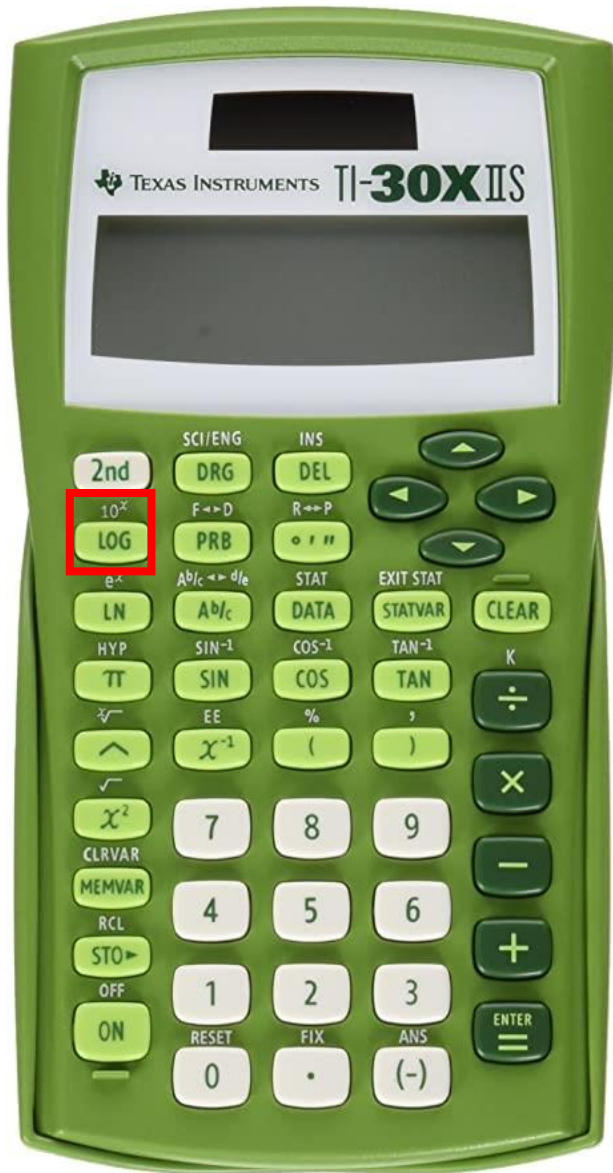
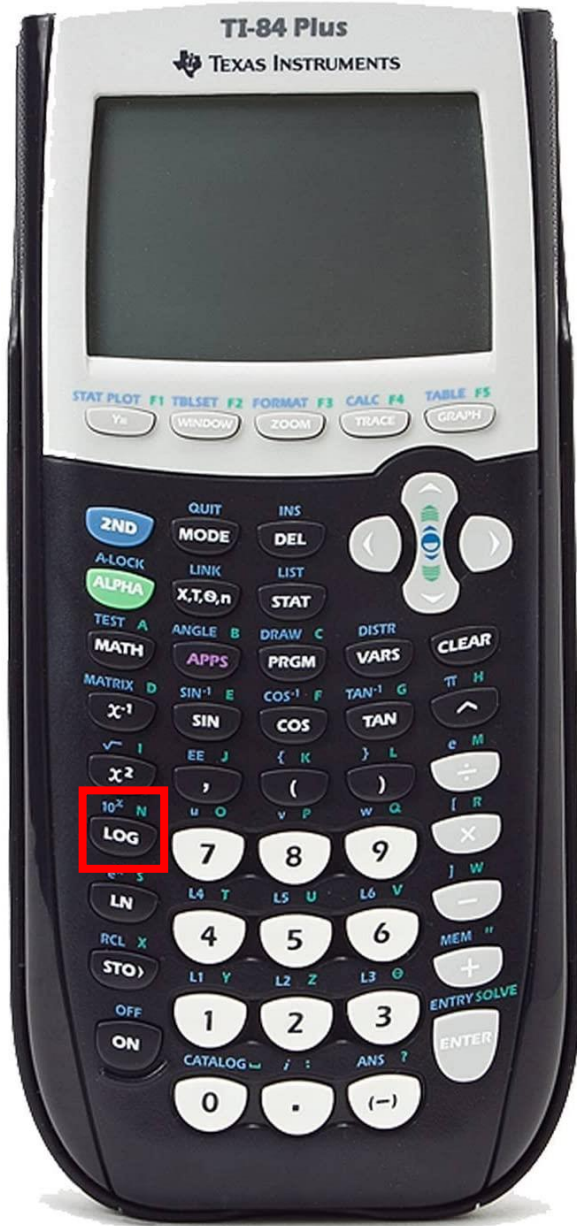


61. Find  $K_a$  values in Table 10.2, and decide which acid in the following pairs is stronger:



62. Which substance in the following pairs is the stronger base? Look at Table 10.1 if necessary.





64. The electrode of a pH meter is placed in a sample of wine, and a reading of 7.9 is obtained. Is the sample acidic, basic, or neutral? What is the concentration of  $H_3O^+$  in the wine sample?

BASIC

$$pH = 7.9$$

$$[H_3O^+] = 10^{-7.9}$$

$$= \boxed{1.3 \times 10^{-8} \text{ M}}$$

65. A 0.10M solution of the deadly poison hydrogen cyanide, HCN, has a pH of 5.2. Is HCN acidic or basic? Is it strong or weak?

ACIDIC

$$pH = 5.2$$

WEAK

according to Table 10.1 AND

$$[H_3O^+] = 10^{-5.2} = 6.3 \times 10^{-6} \text{ M}$$

$6.3 \times 10^{-6} \text{ M}$  is much less than 0.10M meaning not many HCN molecules have dissociated so it is a weak acid

70. Approximately what pH do the following  $H_3O^+$  concentrations correspond to?

a) fresh egg white:  $[H_3O^+] = 2.5 \times 10^{-8} \text{ M}$

$$pH = -\log(2.5 \times 10^{-8}) = \boxed{7.6}$$

