

Acid/Base Practice Test1 (Multiple Choice)

1a	2c	3b	4a	5b	6b	7c	8c	9c	10a
11b	12b	13a	14d	15a	16a	17a	18d	19c	20b
21b	22d	23b	24b	25d	26c	27d	28d	29c	30b
31c	32a	33c	34d	35c	36b	37c	38d	39b	40d

(Written Test)

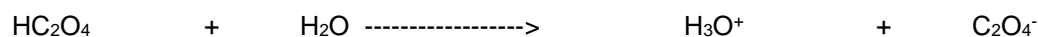
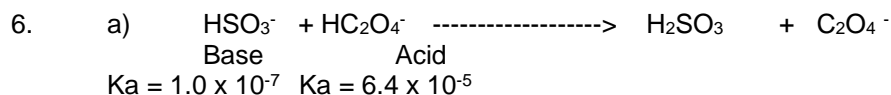
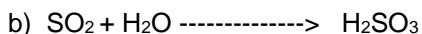
1. (BAAD) - A strong Bronsted Lowry acid fully dissociates and donates all protons.

2. pH = 12.21 (Kb Ice box Q)

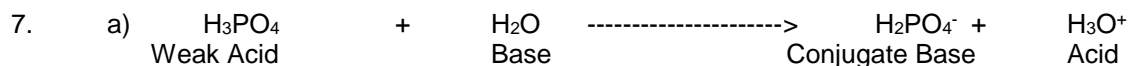
$$3. K_a = \frac{[H_3O^+][C_3H_5O_3^-]}{[HC_3H_5O_3]}$$

4.  $K_a = 1.4 \times 10^{-4}$

5. a) Any non-metal oxide, eg.  $SO_2$



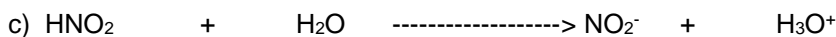
b)  $H_2SO_3$  is a stronger acid than  $HC_2O_4^-$ , so it can donate protons more readily.



b) The pH of the solution does not change much because the KOH is added to a buffer solution. The addition of  $OH^-$  reacts with the  $H_3O^+$ , but there is only a slight change in the  $H_3O^+$  because there is a relatively large  $[H_3PO_4]$  which gets used up to form and maintain the  $[H_3O^+]$ . If the  $H_3O^+$  only gets lowered slightly, the pH will not change significantly with the addition of 10.0 mL of KOH. The pH will only get raised up by a slight amount.

8. a)  $NaNO_2$

b) The Acidity decreases because the reaction shifts left as  $NO_2^-$  reacts with  $H_3O^+$ .



9. pH = 1.10 (.0020 mol excess  $HNO_3$ , \*WATCH YOUR SIG FIGS!)