Calculate the pH during the titration of 100.0 mL of 0.200 M HCl with 0.400 M NaOH. First what is the initial pH (before any NaOH is added)? Answer: Correct Marks for this submission: 1/1. Question 13 Marks: 1 What is the pH after 22.1 mL of NaOH are added? Answer: Correct Marks for this submission: 1/1. Question 14 Marks: 1 What is the pH after 50 mL of NaOH are added? Answer: Correct Marks for this submission: 1/1. **Question 15** Marks: 1 What is the pH after 68.9 mL of NaOH are added? Correct Marks for this submission: 1/1. Question 16 Marks: 1 pH polyprotic acid Calculate the pH of 0.189 MIN osphoric acid (H. PO Aa trep otic acid). $K_{a1} = 7.5 \times 10^{-3}$, $K_{a2} = 6.2 \times 10^{-8}$, and $K_{a3} = 98 \times 2^{-3}$ Answer:

and K_{a3}

Hint, if you are doing much work, you are making the problem harder than it needs to be. Answer: Correct Marks for this submission: 1/1. **Question** 17 Marks: 1 Phosphoric acid is a triprotic acid:

 $H_3PO_4(aq) + H_2O(l) \leftrightarrow H_3O^+(aq) + H_2PO_4^-(aq) K_{a1} = 7.5 \times 10^{-3}$ $H_2PO_4^{-}(aq) + H_2O(l) \leftrightarrow H_3O^{+}(aq) + HPO_4^{-2}(aq) K_{a2} = 6.2 \times 10^{-8}$ $HPO_4^{2-}(aq) + H_2O(l) \leftrightarrow H_3O^{+}(aq) + PO_4^{3-}(aq) K_{a3} = 4.8 \times 10^{-13}$

Determine whether sodium monohydrogen phosphate (Na_2HPO_4) is neutral, basic, or acidic.

First, what is its K_a when it acts as an acid? Answer: Correct Marks for this submission: 1/1. Question 18

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