

## Quiz 14.6 – Weak Acid/Base Titrations

Name: \_\_\_\_\_

These questions concern titrating a solution of  $\text{HNO}_2$  with  $\text{NaOH}$ . 25.00 *ml* of the  $\text{HNO}_2$  solution with unknown concentration are placed in an Erlenmeyer flask, and a burette is filled with a 0.575 *M* solution of  $\text{NaOH}$

**Question 1**

$\text{NaOH}$  is added slowly while the *pH* is monitored. How will you know when the equivalence point of the titration has been reached?

**Question 2**

The equivalence point is reached after 23.42 *ml* of the base have been added. What was the initial acid concentration?

**Question 3**

Now that you know the initial concentration, calculate what the *pH* should have been before any base was added

**Question 4**

What is the *pH* at the equivalence point, and which acid/base indicator would be appropriate for identifying the end-point in a titration without a *pH* meter?

**Question 5**

What will the *pH* be after 11.71 *ml* of  $\text{NaOH}$  have been added?

**Question 6**

What will the *pH* be after you have added 23.67 *ml* and 23.17 *ml* of the  $\text{NaOH}$  solution

**Question 7**

On the back of this page, sketch the titration curve, noting the *pH* at the most important points

## *Pioneers*

By Carol Lynn Pearson

My people were Mormon pioneers.  
Is the blood still good?  
They stood in awe as truth  
Flew by like a dove  
And dropped a feather in the West.  
Where truth flies you follow  
If you are a pioneer.  
I have searched the skies  
And now and then  
Another feather has fallen.  
I have packed the handcart again  
Packed it with the precious things  
And thrown away the rest.  
I will sing by the fires at night  
Out there on uncharted ground  
Where I am my own captain of tens  
Where I blow the bugle  
Bring myself to morning prayer  
Map out the miles  
And never know when or where  
Or if at all I will finally say,  
"This is the place,"  
I face the plains  
On a good day for walking.  
The sun rises  
And the mist clears.  
I will be all right:  
My people were Mormon Pioneers.