

# Chemistry question and answers flashcard



**ASSIGN  
BUSTER**

What are the significant regions in the titration curve? Relate the characteristics of each region to the pH results obtained.

There are four significant regions in each titration curve, namely the initial, pre-equivalence, equivalence, and post-equivalence points. These points are named according to its position relative to the equivalence point. The equivalence point signifies the volume of iterant at which the solution becomes neutral. This is represented in the graph as the drastic change in pH, first with a sudden increase and a sudden decrease of PH.

At the initial point, no iterant has been added yet and the solution's pH equates to the number of H<sup>+</sup> ions originally present in the analyze.

At the pre-equivalence point, the iterant is now added. For this experiment, Noah, a strong base, was added to KIP, a weak acid. With the addition of a strong base to a weak acid, a phenomenon similar to that of buffers occurs, and the solution initially resists drastic pH changes as backed up by the results of the experiment.

At the post-equivalence point, since the solution was already neutralized and excess Noah is still added, the solution's pH further increases. .

Why is continuous stirring important in potentiometers titration? –

Continuous stirring allows for the formation of incremental hotshots, which allows for a higher concentration of the iterant in a localized area compared to the fluid around it. This allows for faster endpoints. 3. Why should the increments of addition be narrowed down as the titration approaches the equivalence point? Because as the titration nears the equivalence point, the

changes in pH become larger, specifically at the equivalence point. The most drastic change happens at this point and the continuous addition of 1 ml increments will not accurately show at which volume the equivalence point occurred at. 4.

Why is potentiometer a suitable method in determining peak of weak acids?

- With potentiometers titration, the potential between the electrodes and the volume of iterant is related.

Using this method, the amount of iterant used for weak acids would be the same as that used for strong acids since it is the number of protons or  $H^+$  ions, measured through the pH, which determines the equivalence point.

With normal titration of strong acids and bases, since  $H^+$  completely dissociates, similar incinerations with a weak acid and strong base titration would not be the same since weak acids do not dissociate completely.

Another advantage of potentiometers titration is the fact that indicators are not used, therefore human error due to failure of recognition of color change may be avoided.

. Discuss possible reasons behind the discrepancies (if any) in the experimental and theoretical peak values. - Human errors may nave detected the results, such as miscalculations, overvaluations and failure of determination of the right pH value since the pH meter tends to fluctuate. Another source of error could be from the pH meter apparatus itself, particularly the electrodes since the classroom's conditions are not perfect.

The failure to rinse the electrodes may result to drastic changes as well.

Another error may result from the failure in accuracy of the analytical balance since it has been used for several years prior. 6. What are the possible sources of errors and their effect on the calculated parameters? Rationalize. -One of the members of the group accidentally touched the magnetic stirrer therefore contaminating the whole set-up.

Since it cannot be estimated whether the action done would result in the increase/decrease in acidity, the effect is indeterminate.

Other possible sources of error include standardization error, such as the failure of correctly measuring the final and initial values which results to drastic changes. Another source of error may be brought out from the preparation of the electrodes, such as failure to recalibrate the electrode once put in a new test solution. This will result in inaccurate results since the previous pH reading still affects the pH meter at the moment it touches the new solution.