YEAR 13 A /B –CHEMISTRY

WEEK 6 (4th October to 8th October)

Topic: Acid and Base equilibrium.

Work sent to the students through Google classroom / Zoom Learning Platform

Resources: Text book, Worksheets, video, power point presentations.

Date	Topic	
04.10.20 Sunday **1-13A** **4-13B** **Mode of Teaching –** Zoom	**Lesson Objective:** - define the term pH -calculate pH from hydrogen ion concentration, and vice versa - calculate the pH of an aqueous solution of a strong acid - deduce the expression for the acid dissociation constant, *K*a, for a weak acid and carry out relevant calculations - calculate the pH of a weak acid making relevant assumptions - define the term p*K*a. . **Success Criteria:** -define pH - calculate the pH of strong acid -deduce expression for Ka and calculate its value -calculate value of pH for weak acids - define pKa, do calculations	Teacher uses power point presentation that contains interactive questions. Students solve the worksheet file questions and upload in the google classroom at end of the lesson
Sunday 04.10.20 **2-13 A** 06.10.20 Tuesday **2-13B** **Mode of Teaching –** Zoom	**Lesson Objective:** - define the ionic product of water, *K*w - define the term p*K*w - calculate the pH of an aqueous solution of a strong base using *K*w. **Success Criteria:** - define the ionic product of water, *K*w - define p*K*w - - calculate the pH of an aqueous solution of a strong base using *K*w.	Teacher uses powerpoint presentation that contains interactive questions. Students solve the worksheet file questions and upload in the google classroom at end of the lesson.

Wednesday 07.10.20 **4- 13A** **2-13B** **Mode of Teaching –** Zoom	**Lesson Objective:** Analyse data from the following experiments: (i) measuring the pH of equimolar aqueous solutions of strong and weak acids (ii) measuring the pH of equimolar aqueous solutions of strong and weak bases (iii) measuring the pH of equimolar aqueous solutions of various salts (iv) comparing the pH of aqueous solutions of strong and weak acids after dilution ● calculate *K*a for a weak acid from experimental data given the pH of an aqueous solution containing a known mass of acid. **Success Criteria:** calculate pH from $[H^+(aq)]$ and $[H^+(aq)]$ from pH for: (i) strong monobasic acids, (ii) weak monobasic acids, (iii) strong bases, using *K*w. Calculate pH of solutions formed after mixing known volumes of solutions. Calculate *K*a for a weak acid, given appropriate data; Calculate the pH of solutions after dilutions. Calculate the concentration of $[H^+]$ of the acid solution, use the $[H^+]$ and the assumptions used in the Ka expression to calculate the value of Ka with units.	Teacher uses power point presentation that contains interactive questions. Students solve the worksheet file questions and upload in the Google classroom at end of the lesson

Homework : Solve worksheet file questions and text book questions page 34.

YEAR 13 A/B– CHEMISTRY

WEEK 6 (4th October to 8th October)

Work Sent to the students through Zoom Learning Platform / Google classroom
Topic:– Standard Electrode potential

Resources: Text book, Worksheet, Video , Boardworks , powerpoint

Date	Topic	
4.10.20 Sunday 4 **13A** 5 **13B** **Mode of Teaching –** Zoom	**Learning Objective:** Know what is meant by the term 'standard electrode potential', E^{θ}. Know that the standard electrode potential, E^{θ}, refers to conditions of: i. 298 K temperature ii. 100 kPa pressure of gases iii. 1.00 mol dm^{-3} concentration of ions. **Learning Outcome:** Assign oxidation numbers to the different elements using the rules. Explain oxidation as increase in oxidation number and reduction as decrease in oxidation number. Define standard electrode potential for an electrode. Explain the conditions maintained for the standard electrode potentials in terms of temperature, pressure and concentrations.	Teacher uses textbook questions and power point to introduce the concept of electrode potential.
4 .10.20 Sunday 8 **13B** 7.10.20 Wednesday 5 **13A** **Mode of Teaching –** Zoom	**Learning Objective:** Know the features of the standard hydrogen electrode and understand why a reference electrode is necessary. Understand that different methods are used to measure standard electrode potentials of: i. metals or non-metals in contact with their ions in aqueous solution ii. ions of the same element in different oxidation states. **Learning Outcome:** Discuss the setup of the standard electrode potential and its use as the reference. Predict how to measure, using a hydrogen electrode, standard electrode potentials of: (i) metals or non-metals in contact with their ions in aqueous solution. (ii) ions of the same element in different oxidation states.	Teacher uses PowerPoint presentation and video to demonstrate the different half cells. Teacher uses worksheet that contains interactive questions, to explain the the cell notation and half equations.

6.10.20 Tuesday 1 **13B** 7.10.20 Wednesday **6 13A** **Mode of Teaching –** Zoom	**Learning Objective:** Understand that standard electrode potentials can be listed as an electrochemical series. **Learning Outcome:** Reinforce the concepts such as • definition of oxidation and reduction in terms of changes in oxidation number, applied to *s*-, *p*- and *d*-block elements. • standard electrode potential and its use as the reference. • the different methods are used to measure standard electrode potentials. • Define electrochemical series.	Instructions will be given to complete chapter questions. Teacher uses text book questions (page 89) based on.

HOMEWORK: Solve textbook question page 104