**Chemistry Unit C1: Structures, Trends, Chemical Reactions, Quantitative Chemistry and Analysis**

**C1.8 Acids, Bases and Salts**

|  |  |  |  |
| --- | --- | --- | --- |
| **Content - CCEA Double Award Chemistry 1 – Fort Hill Integrated College** | Got it | Nearly | Haven’t a clue |
| **C1.8 Acids, Bases and Salts** | | | |
| **Indicators and pH** |  |  |  |
| Can you describe the effects of acidic, alkaline and neutral solutions on indicator papers (red and blue litmus papers and universal indicator paper) and the use of a pH meter to give pH data to at least one decimal place; |  |  |  |
| Can you interpret given data about universal indicator (colour or pH) to classify solutions as acidic, alkaline or neutral and to indicate the relative strengths of acidic and alkaline solutions according to the following classification:   * pH 0–2 strong acid; * pH 3–6 weak acid; * pH 7 neutral; * pH 8–11 weak alkali; and * pH 12–14 strong alkali; |  |  |  |
| Can you recall that acids dissolve in water to produce hydrogen (H+(aq)) ions; |  |  |  |
| **Can you** **recall that the higher the concentration of hydrogen ions in an acidic solution, the lower the pH;** |  |  |  |
| Can you recall that alkalis dissolve in water to produce hydroxide (OH– (aq) ) ions; and |  |  |  |
| **Can you** **demonstrate knowledge and understanding that strong acids and strong alkalis are completely ionised in water,** recall examples of strong acids (includinghydrochloric acid, sulfuric acid and nitric acid) andrecall examples of strong alkalis (including sodiumhydroxide and potassium hydroxide). |  |  |  |
| **Can you** **recall that weak acids and weak alkalis are partially ionised in water,** recall examples of weak acids (includingethanoic acid and carbonic acid) and recall examplesof weak alkalis (including ammonia); |  |  |  |
| **Can you** **explain dilute and concentrated in terms of the amount of substances in solution;** |  |  |  |
| **Reactions of acids** |  |  |  |
| Can you describe neutralisation as the reaction between the hydrogen ions in an acid and the hydroxide ions in an alkali to produce water **and recall the ionic equation** **as:**  **H+(aq) + OH–(aq) → H2O(l)** |  |  |  |
| Can you describe how to investigate the temperature change during neutralisation and recall that neutralisation reactions are exothermic (heat is given out); |  |  |  |
| Can you recall that a base is a metal oxide or hydroxide that neutralises an acid to produce a salt and water and that an alkali is a soluble base; |  |  |  |
| Can you demonstrate knowledge and understanding of and write observations on and equations for the general reactions of hydrochloric, sulfuric and nitric acids with:   * metals; * bases; * carbonates; and * hydrogencarbonates; |  |  |  |
| Can you describe how to test for hydrogen gas: apply a lighted splint and a popping sound results; and |  |  |  |
| Can you describe how to test for carbon dioxide: limewater (calcium hydroxide solution) will change from colourless to milky if the test is positive. |  |  |  |
| **Salts** |  |  |  |
| Can you recall that a salt is a compound formed when some or all of the hydrogen ions in an acid are replaced by metal ions or ammonium ions; |  |  |  |
| Can you demonstrate knowledge and understanding that most Group 1 (I), Group 2 (II), aluminium and zinc salts are white and if they dissolve in water they give colourless solutions, and that transition metal salts are generally coloured; |  |  |  |
| Can you explain the importance of safety in the laboratory to assess potential risks, including the hazards associated with chemicals labelled with the GHS/CLP international chemical hazard labelling (including toxic, corrosive, flammable, explosive and caution); and |  |  |  |
| *Can you describe how to investigate the reactions of acids, including temperature*  *changes that occur (****Prescribed Practical C1****)*. |  |  |  |