

Chemistry 20: Solutions MI Assignment

Name: _____ Partner's Name if it's a drama: _____

INTRODUCTION: An understanding of chemical solutions is an important. For this project, you will use 2 or more of your MI strengths and any available medium **except** a plain poster (music, drama, computer programs, writing, building and drawing) to accurately demonstrate the Chemistry concepts below to the level described in the notes and class discussions. The project must be created alone unless it is a drama or musical which may be done in groups of two.

LEARNING OUTCOME	Self Mark	Peer Mark
<p>Using two or more of your MI strengths, demonstrate your understanding of :</p> <p>1) Mixtures, solutions and concentrations. include a demonstration of:</p> <ol style="list-style-type: none"> Pure substances (element & compound), mixtures (homogeneous & heterogeneous – suspension, colloid and emulsion) and the differences between ionic and molecular solutions (how they dissolve, electrolyte/non-electrolyte, exothermic/endothermic). Solubility and all the factors that affect it. Include what an unsaturated, supersaturated and saturated solution is & describes equilibrium. Molar concentration. Include 5 sample calculations: $C = n/V$; $n=CV$; $V=n/C$; $m \ \& \ V \rightarrow C$; $C \ \& \ V \rightarrow m$. (the last two involve 2 steps) The steps, equipment and sample calculations to prepare a solutions The steps, equipment and sample calculations to prepare a dilution. <p>DUE DATE:</p>	<p>.....</p> <p>25 marks</p>	<p>.....</p> <p>25 marks</p>
<p>2) Solution Stoichiometry. Include a demonstration of</p> <ol style="list-style-type: none"> How to write balanced ionic and net ionic equations, including identification of spectator ions. Include how to calculate the concentration of ions in a dissociation equation. Translating, predicting products, writing states & balancing equations involving solutions How to determine the concentration of a required solution from a given quantity using stoichiometry and a balanced reaction. How to determine limiting reagents, percent yield and percent error in reactions involving solutions Other information about solution stoichiometry such as contrasting quantitative and qualitative analysis OR designing an experiment to identify an ion, e.g., <i>precipitation, flame test</i> <p>DUE DATE:</p>	<p>.....</p> <p>25 marks</p>	<p>.....</p> <p>25 marks</p>
<p>3) Acids, Bases & Neutral Compounds. Include a demonstration of:</p> <ol style="list-style-type: none"> The Arrhenius, operational and Bronstead Lowry definitions AND distinguishing properties of Acids, Bases and Neutral Compounds The relationship between pH, $[H_3O^+_{(aq)}]$, pOH, $[OH^-_{(aq)}]$ & K_w along with at least one calculation using each. (Use appropriate SI units and significant digits) (10 marks) Acid base reactions(neutralization; ionization of monoprotic & polyprotic strong acids; dissociation of monoprotic & polyprotic strong bases) A strong acid-base titration. Include indicator choice, titration curve & determination of the concentration of the acid or base using simple stoichiometry <p>DUE DATE:</p>	<p>.....</p> <p>25 marks</p>	<p>.....</p> <p>25 marks</p>

Score	Scoring Description
25 (5)	Demonstrates a thorough & correct understanding of the concept, idea or skill. The project is well organized and addresses all the major learning outcomes using information provided to the student in the class notes/discussion. The project also addresses other worthwhile learning outcomes . More than one Multiple Intelligence Strengths is used to illustrate understanding of the whole concept, idea or skill.
20 (4)	Demonstrates a thorough & mostly correct understanding of the concept, idea or skill. The project is well organized and addresses a majority of the learning outcomes . One or more Multiple Intelligence Strengths may be used to illustrate understanding of the whole concept, idea or skill.
15 (3)	Demonstrates a somewhat correct understanding of the concept, idea or skill. The project is organized and addresses most of the major learning outcomes . At least one Multiple Intelligence Strength is used to illustrate understanding of part of the concept, idea or skill.
10 (2)	Demonstrates a poor but partly correct understanding of the concept, idea or skill. The project is disorganized and addresses some of the major learning outcomes . Partial use of one Multiple Intelligence Strength is evident to illustrate the understanding of part of the concept, idea or skill
5 (1)	Demonstrates a poor and incorrect understanding of the concept, idea or skill. The project is very disorganized, superficial and addresses few of the major learning outcomes . There is little or no Multiple Intelligence Strength being used.
0	The project does not address any of the major learning outcomes provided. There is little or no evidence of a Multiple Intelligence Strength be used.