



Section	Page	Learning Outcome	Red	Amber	Green
4.1	218 - 219	Classify solutes as non-, weak, or strong <i>electrolytes</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	220	Write <i>dissociation equations</i> for ionic solids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	221	Calculate the <i>molarity</i> of a solution, given how it was prepared.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	221	Relate ion concentrations to the concentration of their parent compound and vice-versa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	222	Calculate the resulting ion concentrations when a solution is diluted by adding water or by mixing it with another solution(s).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	223	Define <i>solubility</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	223	Convert g/mL to Molarity and vice-versa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	224	Describe the chemical equilibrium that exists in <i>saturated</i> solutions of ionic solids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2	228 - 229	Use the <i>Solubility Table</i> to determine whether an ionic solid is <i>soluble</i> or has <i>low solubility</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	230	Write the <i>formula equation</i> , <i>complete ionic equation</i> , and <i>net ionic equation</i> for a <i>precipitation reaction</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	231 - 232	State 3 techniques for identifying ions in solution. Identify what ions might be present in a solution from the results of precipitation trials, e.g. precipitates with SO_4^{2-} but not with OH^- .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	232 - 233	Devise a <i>selective precipitation</i> scheme to separate different types of ions from solution (e.g. SO_4^{2-} from S^{2-}) by precipitating them one at a time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	234	Describe a technique that may be used to identify precipitates.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	235	Describe possible causes of, harms of, and treatments for <i>hard water</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3	241 - 242	Define the <i>solubility product constant</i> (K_{sp}).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	242 - 243	Determine the K_{sp} of a compound from its solubility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	245 - 246	Determine the solubility of a compound from its K_{sp} .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4	251 - 252	Determine whether a precipitate will form from a solution's ion concentrations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	253 - 254	Calculate the maximum concentration of any ion that can coexist in a solution containing known concentrations of other ions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	255	Describe and explain the <i>common ion effect</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	256 - 257	(Extension) Calculate the solubility of a compound in a solution containing a common ion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>