

**Question 6: Short Answer****4 points**

- (a) For a correct description: **1 point**

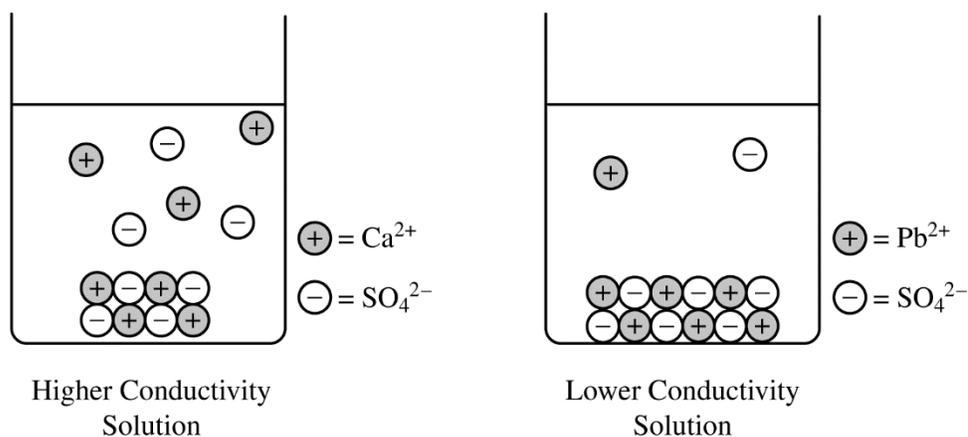
*Ionic solids do not have free-moving ions that are required to carry an electric current. Therefore, there is no conduction of electricity.*

- (b) For the correct answer and a valid justification: **1 point**

*CaSO<sub>4</sub>. The greater electrical conductivity of the CaSO<sub>4</sub> solution relative to the PbSO<sub>4</sub> solution implies a higher concentration of ions, which comes from the dissolution (dissociation) of CaSO<sub>4</sub> to a greater extent.*

- (c) For a correct drawing that shows an equal number of cations and anions: **1 point**

*The drawing shows solid PbSO<sub>4</sub> at the bottom of the beaker (similar to the solid shown for CaSO<sub>4</sub>) and fewer dissociated Pb<sup>2+</sup> and SO<sub>4</sub><sup>2-</sup> ions in the solution.*



- (d) For a correct explanation: **1 point**

*The additional precipitate is CaSO<sub>4</sub> that forms in response to the increased [SO<sub>4</sub><sup>2-</sup>] in solution. According to Le Chatelier's principle ( $Q > K_{sp}$ ), the introduction of SO<sub>4</sub><sup>2-</sup> as a common ion shifts the equilibrium towards the formation of more CaSO<sub>4</sub>(s).*

**Total for question 6 4 points**