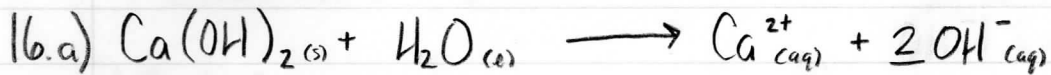


15. b) Yes, water at a higher temperature is still neutral. This is because even though there was a temperature increase, water will still have the same ratio of hydrogen to hydroxide ions (while they both increase in concentration). The pH may change but the water will still be neutral as long as the two concentrations remain the same.



$$\text{pH} = 12.50$$

$$\text{pOH} = 1.50$$

$$[\text{OH}^{-}] = 10^{-\text{pOH}}$$

$$= 10^{-1.50} = 0.0316 \text{ M/L}$$

$$n = C \cdot V = (0.0316)(0.600)$$

$$= 0.0190$$

$$0.0190 \text{ Mol} \times \frac{1 \text{ mol Ca(OH)}_2}{2 \text{ mol OH}^{-}} = 0.0095 \text{ mol Ca(OH)}_2$$

$$3) m = n \cdot M$$

$$= (0.0095 \text{ mol})(74.10 \text{ g/mol})$$

$$= 0.70 \text{ g}$$

$$b) \text{pOH} = -\log(\text{OH}^{-})$$

$$= -\log(0.0190)$$

$$= 1.72$$

$$C = \frac{n}{V} = \frac{0.0190}{1.000} = 0.0190$$

$$2) \longrightarrow 1.72$$