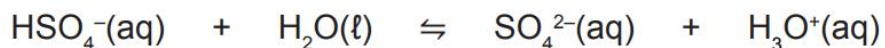


Question 28**(10 marks)**

A hydrogen sulfate/sulfate system is represented by the following equation.



(a) Predict how

- the forward reaction rate and
- the pH

will differ from their original values after the following changes are imposed on the system and equilibrium has been re-established. Use the terms **increase**, **decrease**, **no change**.

(6 marks)

Change imposed by the addition of	Effect on forward reaction rate when equilibrium is re-established	Effect on pH when equilibrium is re-established
a few drops of concentrated hydrochloric acid		
a few drops of concentrated lead(II) nitrate solution		
distilled water		

- (b) The reaction in part (a) is endothermic in the forward direction as written. Predict what will happen to the pH when the temperature is increased. Justify this prediction. (4 marks)
