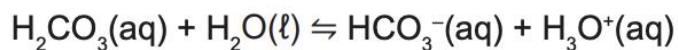


**Question 28****(8 marks)**

The pH of blood is maintained in a narrow range by the carbonic acid and hydrogencarbonate buffer system, represented by the following equilibrium:



- (a) Define the term 'buffer' and identify the chemical species in this system responsible for its buffering capacity. Specify the role of each chemical species you identify in your answer.

**(3 marks)**

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- (b) Explain what will happen in the blood when there is an elevated concentration of carbon dioxide. Predict how blood pH is affected. Include relevant equations in your answer.

**(5 marks)**

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