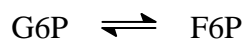**Marks
6**

- The isomerisation of glucose-6-phosphate (G6P) to fructose-6-phosphate (F6P) is a key step in the metabolism of glucose for energy.

$$G6P \; \rightleftharpoons \; F6P$$

At 298 K, the equilibrium constant for the isomerisation is 0.510. Calculate the value of $\Delta G°$ at 298 K.

Answer:

Calculate ΔG at 298 K when the [F6P] / [G6P] ratio = 10.

Answer:

In which direction will the reaction shift in order to establish equilibrium? Why?

Sketch a graph of G_{sys} *versus* "extent of reaction", with a curve showing how G_{sys} varies as G6P is converted to F6P. Indicate the position on this curve corresponding to the point where [F6P] / [G6P] ratio = 10. Indicate on the graph that section of the curve where $Q > K$.