

Thermodynamics (Classical) for Biological Systems

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Self Evaluation Questions

The students can use the following questions to check their understanding of the material presented in the course. If something is unclear, they can go back to the relevant lectures and clarify themselves. The questions are arranged, module-wise, including the introductory module.

Module 6 Reaction Equilibria

1. What is the reaction coordinate (or extent of reaction)?
2. What are the conditions for equilibrium of a system in which bioreactions take place?
3. How does the phase rule get modified when bioreactions are taking place in the system?
4. How can K_p , the equilibrium constant based on partial pressures, be expressed in terms of chemical potential?
5. What are the relationships between (a) K_p and K_C (b) K_p and K_y ?
6. How are the equilibrium constants of gas phase reactions affected by temperature – give a quantitative measure. Does pressure affect the same?

7. What are the differences between equilibrium constants for (a) gas phase reactions and (b) liquid or solid phase reactions?

8. How do the equilibrium constants for liquid or solid phase reactions get affected by (a) temperature and (b) pressure? (Quantitatively speaking)

9. Why do we need to study ionic equilibria?

10. What is the condition for equilibrium of a system in which ionic reactions take place?