

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 3 Thermodynamics of Pure Substances

1. What is the difference in the formulations in terms of the chemical potential, for an ideal gas and a real gas?
2. What are equations of state (EOS)?
3. What can virial equations effectively describe?
4. Why do we need cubic equations of state when virial equations are available?
5. What modifications are needed to the Redlich-Kwong equation to estimate vapour and liquid volumes?
What modifications are needed to the Van der Waals equation for the same purposes?

6. What are generalized equations of state? What is their utility?
7. What is the three parameter theorem of corresponding states?
8. What are residual properties? What is their utility?
9. What do you understand by 'generalized correlations' for 'residual properties'?
10. How can one estimate the fugacity coefficient of a pure substance?