Questions, Physical Chemistry I, 2018
Test 5

1. Plot the melting point diagram of a two component system with partial miscibility in the solid phase!
2. Plot the melting point diagram of the conguent melting and indicate the phase compositions!
3. Plot the melting point diagram of the incongruent melting and indicate the phase compositions!
4. Plot the p-T diagram of the solvent and the dilute solution and indicate the vapor pressure lowering, the boiling point elevation, and the freezing point depression in the figure!
5. Derive the Gibbs-Helmholtz equation!
6. Add the Taylor-series of the ln(1-x) function up to the third oder!
7. How does the boiling point elevation depend on the molality of solute?
8. The van't Hoff equation of the osmotic pressure
9. Definition of molar enthalpy of mixing
10. The molar enthalpy of mixing in an ideal solution
11. Definition of differential heat of solution
12. Henry´s law
13. Le Chatelier's principle
14. What is the method of intercepts?
15. What are the conditions of the thermodynamic stability of solutions?
16. Draw a liquid-liquid phase diagram where both the upper and the lower critical solution temperatures appear!