Questions, Physical Chemistry I, 2018
Test 2

1. The first law for an open system
2. Enthalpy balance for a steady state system
3. Thermodynamic definition of entropy
4. Temperature dependence of entropy at constant pressure
5. Temperature dependence of entropy at constant volume
6. Entropy change of an isothermal process
7. Entropy change during the free expansion of an ideal gas system
8. Expression of the second law with the help of entropy
9. What is the thermodynamic probability and how to calculate it?
10. Boltzmann distribution
11. Statistical definition of entropy
12. The third law of thermodynamics
13. Plot a Carnot cycle in a T-S diagram!
14. Definition of Helmholtz free energy
15. How does the Helmholtz free energy of a closed system of constant temperature and volume change if there is no work done?
16. The change of Helmholtz free energy in an isothermal reversible process
17. The definition of Gibbs free energy
18. How does the Gibbs free energy of a closed system of constant temperature and pressure change if pV work is done only?
19. The change of Gibbs free energy in an isothermal isobaric reversible process
20. The complete differential of the internal energy in a closed system if no other than pV work is done. (The fundamental equation of a closed system)
21. The complete differential of the Helmholtz free energy in a closed system if no other than pV work is done.
22. The complete differential of the enthalpy in a closed system if no other than pV work is done.
23. The complete differential of the Gibbs free energy in a closed system if no other than pV work is done.