Short test questions I, 2020

1. What is an isolated, a closed and an open system?

2. What is a state function?

3. What are extensive and intensive quantities? (Examples)

4. The ideal gas law

5. Definition of internal energy

6. Under what circumstances is the change of internal energy equal to the heat?

7. The first law for an isolated and for a closed system

8. The definition of work in changes of volume (pV work)

9. The work in changes of volume (pV work) at constant pressure

10. Definition of molar heat capacity

11. Definition of enthalpy

12. What is the physical meaning of change of enthalpy?

13. What is the change of enthalpy if n mol substance is heated from T_1 to T_2 temperature and $C_{mp} = a + bT + cT^{-2} + dT^2$?

14. How does the internal energy of an ideal gas depend on pressure?

15. How is the heat of reaction calculated from the heats of formation?

16. pV work for n mol ideal gas at constant temperature

17. What is an adiabatic process?

18. Plot an isotherm and an adiabat in a p-V diagram

19. Definition of the Poisson constant

20. What is the relation between the volume and the pressure in an adiabatic reversible process of an ideal gas?

21. Definition of heat of reaction

22. Definition of standard heat of reaction

23. Hess's law

24. How is the heat of reaction calculated from the heats of combustion?

25. Define the heat of formation.

26. How is the heat of reaction calculated from the heats of formation?