

### Questions for the Colloquium 1.

1. Give the definition for Biophysics. Does biophysics belong to biology, or is it a part of physics?
2. Tell, what you know about the history of Biophysics
3. Name and describe the divisions of Biophysics
4. Give the definition of entropy in different formulations (Clausius, Boltzmann), write the formulas. Describe the properties of entropy.
5. Information and Entropy. Define an Information.
6. Thermodynamic variables. Name and classify.
7. Energy of Activation, explain and define it.
8. Describe the Theory of Absolute Reaction Rate.
9. What kinds of Thermodynamic systems do know? Name and describe.
10. First law of thermodynamics. Give definitions, explain.
11. Show and explain Van't Hoff rule of temperature dependence
12. Second law of thermodynamics. Give and explain different statements of this law, explain.
13. Give definitions of thermodynamic functions (U, H, S, F, G)
14. Describe Lavoisier and Laplace calorimetric experiment. Which law of thermodynamics proved these scientists? Why?
15. What does Hess's Law state? Explain and give some examples.
16. Write and explain Gibbs fundamental equation.
17. A thermodynamically based classification of the various kinds of stationary states
18. Define the stationary state. Which types of stationary states do you know? Compare them.
19. How changes the Entropy balance of an isolated system?
20. How changes the Entropy balance of a closed system?
21. How changes the Entropy balance of an open system?
22. Define and show a thermodynamic equilibrium, using some example.
23. Give definition for Prigogine principle and explain it.