Biochem 1 Name:

Also write your name on the other side of this page.

True or False

* 1. The entropy of the universe is conserved. [T / F]
  2. The enthalpy of the universe is conserved. [T / F]
  3. The energy of the universe is conserved. [T / F]
  4. The free energy of the universe is conserved. [T / F]
  5. When a cup of hot coffee cools to room temperature the entropy of coffee increases. [T / F]
  6. When a cup of coffee cools to room, temperature, the entropy of the universe increases [T / F].
  7. When an ice cream cone melts on a hot day in Phoenix the entropy of the universe increases [T / F].
  8. A system with a larger number of available states (or microstates) has greater entropy [T / F].
  9. For a spontaneous process, DG < 0. [T / F]
  10. For a spontaneous process, DS (of the universe) < 0. [T / F]
  11. For a system undergoing a spontaneous process, DS (of the surroundings) < 0. [T / F]
  12. For the hydrolysis of ATP in a cell, DG < 0. [T / F]
  13. If you cannot observe change with time, then a system is at equilibrium. [T / F]
  14. Biology violates the second law of thermodynamics



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| DH (kcal/mol) | DS (cal/mol K) | T | DG | solid or vapor |
| -90 | -100 | 100K |  |  |