3 Points Each. Please mark your answers on the scantron sheet. You may keep this copy.

1. Which statement is true about the following two molecules?

   a) They are stereoisomers.
   b) The structure on the right is lower in energy than the one on the left.
   c) The structure on the left is lower in energy than the one on the right.
   d) Both structures have the same energy.

   Note: This is a little tricky. The structure on the right has a conformation where both methyls are equatorial. The one on the left has one axial in both chair conformations.

2. What is the correct IUPAC name for the following?

   a) trans-2-chloro-2-hexene
   b) cis-2-chloro-2-hexene
   c) E-2-chloro-2-hexene
   d) Z-2-chloro-2-hexene

3. What type of free radical process is the following?

   a) Initiation Step
   b) Propagation Step
   c) Termination Step
   d) Nucleophilic Step

4. The rate of a reaction is determined by . . .

   a) how many intermediates are formed.
   b) the energy of the highest transition state.
   c) the activation energy of the fastest step.
   d) having a large negative $\Delta G$.

5. Bond Dissociation Energy is a measure of . . .

   a) Entropy - $\Delta S$
   b) Temperature
   c) Enthalpy - $\Delta H$
   d) $K_{eq}$

6. Which of the following substituents would have the HIGHEST Cahn-Ingold-Prelog priority?

   a) $\text{Br}$
   b) $\text{OH}
   c) $\text{Cl}$
   d) $\text{O}$

7. Which of the following statements about alkenes is FALSE?

   a) Cis isomers are less stable than trans isomers.
   b) Alkenes are unsaturated.
   c) The pi-bond can easily rotate.
   d) Alkenes will react with HBr.