**Understanding Enzymes**

Enzymes are important biological macromolecules that do work in all living things. Plants, animals, and prokaryotes all depend on enzymes to break down large molecules or build new ones. Enzymes are made of one or more proteins, and proteins are made based on information found in your DNA. Of course there are even enzymes that make other enzymes!

Use the diagram above to answer the following questions.

**In STEP 1…**
1. Molecule C is a large protein (or several proteins together) that we call an ________________________.
2. Molecules A and B are called substrates and are usually____________________, or building blocks of larger macromolecules. (*Think back to our review of what the repeating units are that make up larger macromolecules.*)
3. Which of the four major biological macromolecules is C made of? _________________________

**In STEP 2…**
4. Molecules A and B are now bound to molecule C’s ________________________.
5. Is molecule C breaking apart (decomposing) or building (synthesizing) a macromolecule? ________________________
6. If a solution is too acidic or basic, molecule C can ________________________ (change its shape) so that A and B will no longer fit.

**In STEP 3…**
7. What will happen to molecule C now that the reaction is complete? __________________________________________
8. Other than pH, what can affect how an enzyme is able to react? __________________________________________
9. Molecule D is made up of building blocks represented by A and B. If D represents a polysaccharide, A and B would represent ________________________.
10. Enzymes make reactions occur faster by lowering the ________________________, which is the energy required for a reaction to occur.
11. Enzymes are ________________________, which are things that participate in a chemical reaction and help them occur more efficiently.