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| --- | --- |
| **Macromolecule** | **Monomer** |
| Lipid | Fatty acid and glycerol |
| Carbohydrate | Monosaccharide |
| Protein | Amino Acid |
| Nucleic Acid | Nucleotide |

**Biochemistry Quiz Study Guide Answer Key**

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| --- | --- |
| **Macromolecule** | **Function** |
| Lipid | Long term energy storage |
| Carbohydrate | Short term energy storage |
| Protein | Builds muscle, enzymes |
| Nucleic Acid | Stores genetic information |

1. Enzymes are proteins that help to speed up chemical reactions.
2. Catabolic enzymes break down polymers, anabolic enzymes take monomers and build them up to polymers.
3. Enzymes work by either taking **substrates** such as **monomers** and making a **macromolecule** (the product) or by taking **macromolecules** (**substrates**) and breaking them apart into **monomers** (the product). The chemical reaction occurs at the enzymes **active site**. When the substrates and enzymes are together there is a chemical reaction that occurs. In this chemical reaction enzyme lowers the **activation energy** needed for products to be produced.
4. Enzymes are considered specific because they have a certain shape at the active site that only fits the substrate that the enzyme will act on.
5. Saliva has a catabolic enzyme in it called Amylase. Amylase breaks down complex carbohydrates (starches) into their monomer (monosaccharides or glucose).
6. Temperature affects enzyme activity by speeding up the reaction at an optimum temperature. If the temperature is cold it slows down the chemical reaction, if the temperature is too hot it denatures the enzyme activity.
7. A little over 40 degrees Celsius.
8. **Benedicts:** monosaccharide (glucose) **Iodine:** Starches **Biuret:** Protein