**Pre AP Biology 11**

Protein structure

Proteins are the **\_\_\_\_\_\_\_\_\_\_\_.** They are made of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (**\_\_\_\_\_\_\_\_\_\_\_\_**) – there are **\_\_\_\_\_\_\_\_\_** in total



How do they bond together?

A **\_\_\_\_\_\_\_\_\_\_\_\_** bond is a type of **\_\_\_\_\_\_\_\_\_\_\_\_** bond

OH + H = H2O = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

The peptide bond causes the amino acids to be **\_\_\_\_\_\_\_\_\_\_\_** and leads to **\_\_\_\_\_\_\_\_\_\_\_\_** bonding.

**4 Structures of proteins**

1. **Primary** - a **\_\_\_\_\_\_\_\_\_\_\_** chain of amino acids with peptide bonds – different **\_\_\_\_\_\_\_\_\_\_\_\_\_** of the 20 amino acids
2. **Secondary** – due to the **\_\_\_\_\_\_\_\_\_** nature of the peptides (amino acids), hydrogen bonds will form between the amino acids. This causes the chain to form a **\_\_\_\_\_\_\_\_\_\_\_\_**(right hand spiral) or to fold = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



1. **Tertiary** – more folding occurs due the covalent/hydrogen bonds between amino acids and **\_\_\_\_\_\_\_\_\_\_\_**bonding between R-groups. Still only consists of **\_\_\_\_\_** polypeptide chain



1. **Quaternary** – **\_\_\_\_\_\_\_** or more polypeptide chains **\_\_\_\_\_\_\_\_\_\_\_\_\_.**

Example is hemoglobin (found in red blood cells)