Chemistry 100 **Name**_____

Worksheet 16

1. What is the name of the individual units that make up the chain of polypeptides?

2. What is the name of the bond between these individual units?

3. What is the term used for a molecule that can act as an acid and a base?

4. For the following state if it best describes a fibrous protein or a globular protein

Description	Fibrous or Globular or both?
insoluble in water	
cannot move from one place to another	
enzymes, insulin antibodies	
hair, muscle	
structural proteins	
long linear chains	
have a primary structure	
have a quaternary structure	
held together by peptide bonds	
can contain secondary structure	
attracted to water	

5. What is produced when a polypeptide chain is hydrolyzed?

6. For the following description state which structure (or structures) best relates: primary 1^{o}, secondary 2^{o} ,tertiary 3^{o}, quaternary 4^{o}. You may use more than one.

Description	**Structure**
Alpha helix	
Sequence of amino acids	
found in fibrous protein	
found in enzymes	
maintained by hydrogen bonds	
broken down only by hydrolysis (not denaturing)	
found in silk	
found only in globular proteins	
broken down by denaturing	
found in muscle	
made of subunits of tertiary structure	

7. What are four parts of an amino acid?

8. In the space below, draw two simple amino acids hooked together by a peptide bond. Circle the peptide bond.

9. For the following state if it best describes denaturing or hydrolysis

Description	**Denaturing or hydrolysis**
losing the shape of the protein	
happens when meat or eggs are cooked	
loss of solubility	
breaking the amide linkage	
happens when a strong acid is added	
loss of biological activity	
when the chain is cut into individual amino acids	
breaks hydrogen bonds	
unfolds the protein	
destroys primary structure	
breaking of the polypeptide chain	

Complete the following table by adding the function or type of protein

Type	**Function**
hormone	
	transports hemoglobin in blood
	attacks viruses and other foreign proteins
	found in hair bone cartilage
Storage proteins	
	catalysts that hydrolyze sucrose, lipids and peptide bonds
	found in muscle