Chemistry 2, HW 25

Here's a list of amino acids classified according to their properties:

Nonpolar Amino Acids:

Glycine (Gly)
Alanine (Ala)
Valine (Val)
Leucine (Leu)
Isoleucine (Ile)
Methionine (Met)
Proline (Pro)
Phenylalanine (Phe)
Tryptophan (Trp)

Polar Amino Acids:

Serine (Ser)
Threonine (Thr)
Cysteine (Cys)
Tyrosine (Tyr)
Asparagine (Asn)
Glutamine (Gln)

Acidic Amino Acids (Negatively Charged):

Aspartic Acid (Asp)
Glutamic Acid (Glu)

Basic Amino Acids (Positively Charged):

Lysine (Lys)
Arginine (Arg)
Histidine (His)

Remember, some amino acids can have characteristics that place them in more than one category, depending on the context.

The formation of a peptide bond is a key step in the synthesis of proteins, which are composed of long chains of amino acids linked together by these bonds. Condensation Reaction: The actual formation of the peptide bond occurs through a condensation reaction between the carboxyl group (-COOH) of one amino acid and the amino group ($-NH_2$) of another amino acid. During this reaction, a molecule of water (H_2O) is eliminated, and the carboxyl group of one amino acid bonds covalently with the amino group of the adjacent amino acid, resulting in peptide formation.

Questions:

Write the reaction of peptide formation between

1. Serine and Alanine.
2. Glycine and Threonine.