

1. The two major (shape) families of proteins are _____ and _____. (6 points)
2. Name 6 of the 9 different biological functions of proteins. (12 points)
3. Place the following amino acids next to the appropriate labels below by writing out their full names: gly, trp, thr, asn, his (10 points)

nonpolar side chain –

polar neutral side chain –

polar acidic side chain –

polar basic side chain –
4. What is meant by *native* protein? (3 points)
5. Pure alanine does not melt, but decomposes at 290 °C. In contrast, the ethyl ester of alanine melts at only 87 °C. Explain the large difference in melting points. (5 points)

6. Draw the structures of the products that form when the following polypeptide is completely digested. (8 points)



