Homework Problems

1. How are proteins important to living systems? Name 2 different functions that different proteins can have?

2. What is the name of the smaller units that comprise a protein?

3. Why is the structure of a protein important to know?

4. Draw the structure of alanine.

5. What is the primary *structural* fault in the hemoglobin of sickle-cell anemia?

6. What happens in blood cells in sickle-cell anemia that causes their shapes to become distorted?

7. What problems are caused by the distorted shapes of the red cells?

8. What are (a) the function and (b) the composition, in general terms only, of an enzyme?

9. What name is given to the part of an enzyme where the catalytic work is carried out?

10. How is enzyme specificity explained?

11. How does competitive inhibition of an enzyme work?

12. What is the general name for the chemicals that are most intimately involved in the storage and the transmission of genetic information?

13. The monomer units for the nucleic acids have what *general* name?

14. What are the names and symbols of the four bases that are liberated by the complete hydrolysis of (a) DNA and (b) RNA?

15. If the AGGCTGA sequence appeared on a DNA strand, what would be the sequence on the DNA strand opposite it in a double helix?

16. Which triplet, ATA or CGC, cannot be a codon? Explain.

17. Which amino acids are specified by the following codons?
    a) UUU b) UCC c) ACA d) GAU

18. What is meant by translation, as used in this chapter? And what is meant by transcription?

19. What is a virus made of?