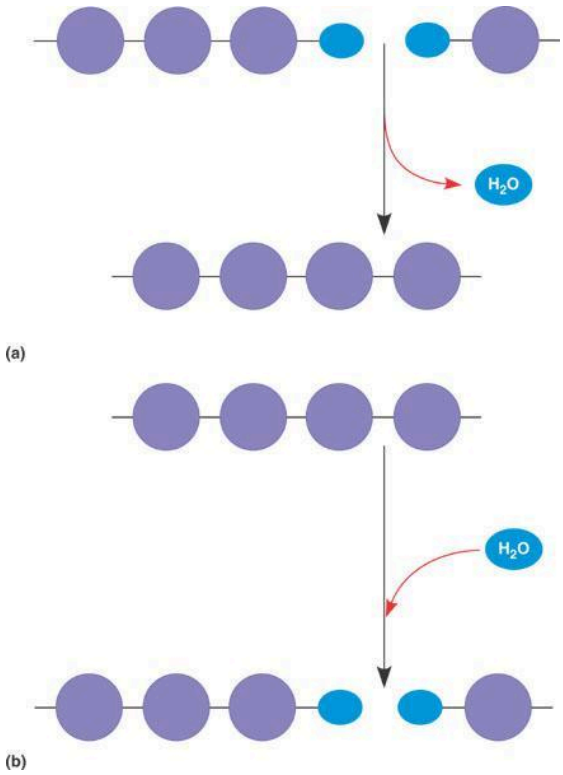
Chapter 5 Guided Reading Assignment Biological macromolecules

1. Label the diagram below – identify a monomer, polymer, condensation reaction, and hydrolysis.



2. What are the three hexose monosaccharides?

3. What is a glycosidic linkage and what do the numbers 1-4 and 1-2 relate to?

4. Compare and contrast the two storage polysaccharides.

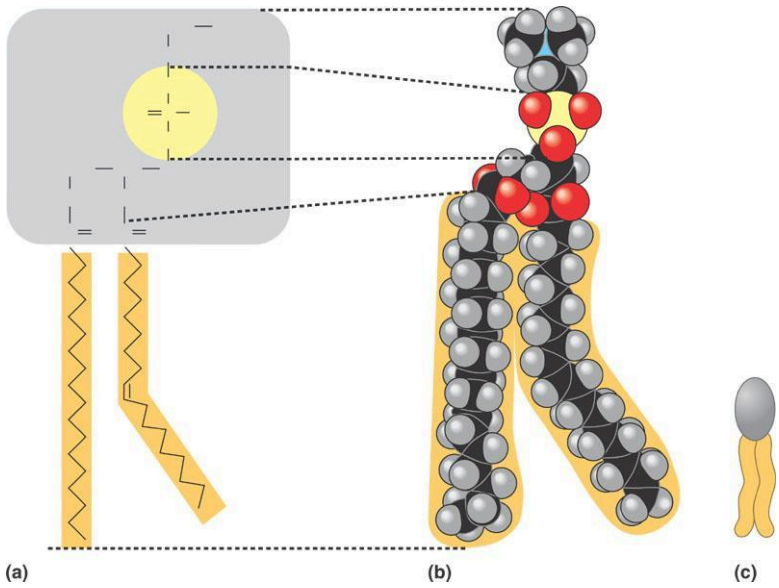
5. Compare and contrast the two structural polysaccharides.

6. Why are lipids grouped together?

7. What are the building blocks of fats?

8. Contrast saturated and unsaturated fats – how does this relate to the concept that structure and function are linked?

9. Label the molecule below.

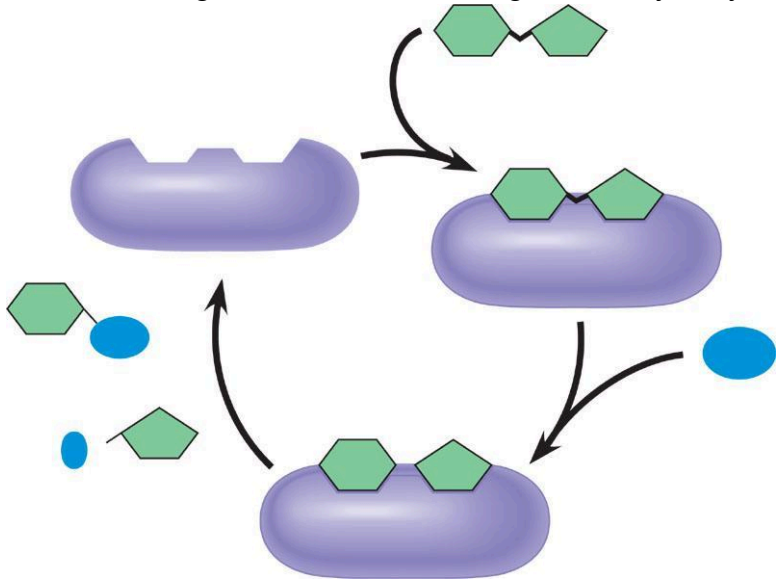


10. How would you recognize a basic steroid molecule?

11. List the eight types of proteins and their basic function.

12. What are the names for the monomers and polymers of proteins?

13. Label the diagram below concerning the catalytic cycle of an enzyme -



14. Draw two amino acids – note the amino group, the carboxyl group and the alpha carbon, circle the water molecule to be removed and then note the peptide bond formed when the two are joined.

15. Explain the four levels of protein structure –

a. Primary

b. Secondary

c. Tertiary

d. Quaternary

16. How does the characteristics of an amino acid – nonpolar, polar, acidic or basic relate to the issue of tertiary and quaternary structure?

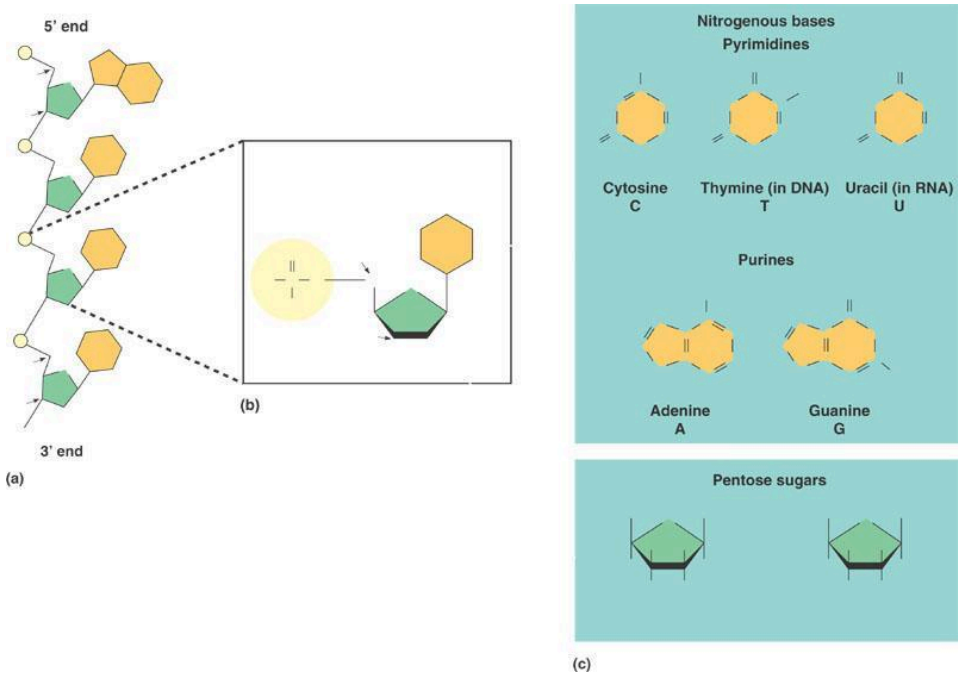
17. What does denaturation mean and why is it important?

18. What are chaperonins and what is their role in protein structure?

19. Describe the technique of x-ray crystallography.

20. What are the roles of nucleic acids?

21. Label the blank diagram below:



22. What is meant by the term that DNA is antiparallel?