A.P. Bio
L.C.

UNIT 2 REVIEW

A.) Properties of Water

1. Draw a structural molecule of water.
   Label the polar regions of the molecule.

2. Draw the hydrogen bonding that forms between water molecules.

3. List and describe 6 properties of water.

4. Explain the biological significance of each property.

B.) Carbon and it's Molecular Diversity

5. How are organic molecules different from inorganic molecules?

6. Explain why organic compounds tend to be diverse macromolecules.

7. Describe the three types of isomers.

8. List the six biologically important functional groups and their properties.

C.) Carbohydrates

9. Describe the relationship between monomers and polymers.

10. What three elements are found in carbohydrates?

11. What is the ratio of H to O in a carbohydrate?

12. What are the building blocks of carbohydrates?

13. Describe a dehydration synthesis (condensation) reaction.

14. Describe a hydrolysis reaction.

15. Name the monosaccharide organisms use as an immediate energy source.

16. What is the formula of this monosaccharide?

17. What is the relationship between alpha and beta glucose?

18. Name the bond that holds monosaccharides together.

19. What is the difference between disaccharides and polysaccharides?

20. Discuss the role of structural polysaccharides in plants and animals.

21. Discuss the function of carbohydrates in plants and animals.

C.) Lipids

22. What three elements are found in lipids?

23. Compare the amount of oxygen in a lipid to the amount of oxygen in a carb.

24. What are the building blocks of lipids?

25. Are lipids hydrophilic or hydrophobic? Polar or Nonpolar?

26. Compare the structure of triglycerides, phospholipids, glycolipids, & steroids.

27. What is the difference between saturated & unsaturated fats (triglycerides)

28. Name the bond that holds a fatty acid to the glycerol in a triglyceride.

29. Discuss structural importance of lipids in plants and animals.

30. Discuss the function of lipids in plants and animals.

D.) Proteins

31. What elements are found in proteins?

32. What are the building blocks of proteins?

33. How many different amino acids are there?

34. What makes each different amino acid unique?

35. Describe the structure of an amino acid

36. What is the difference between dipeptides and polypeptides?

37. Name the bond that forms between amino acids.

38. Discuss the levels of protein structure.

39. Explain why proteins are the most diverse organic compounds both in structure and function.

40. Discuss the importance of proteins in both plants and animals. (Identify all 8 types of proteins)

D.) Nucleic Acids

41. What elements are found in Nucleic Acids?

42. What are the building blocks of Nucleic Acid?

43. Name the two types of Nucleic Acid.

44. Why can they be also called "polynucleotides"?

45. Describe the structure of a nucleotide.

46. Discuss four differences between DNA and RNA.

47. Name the bond that joins a nucleotide to another nucleotide.

48. Where specifically do the above named bonds form?

49. Describe the base pairing rules in Nucleic Acids.

50. What type of bond forms between nitrogenous base pairs?

51. How are purines different from pyrimidines?

52. Why is DNA known as an antiparallel polymer?

53. Discuss the importance of Nucleic Acids in living organisms.