Name_____

AP Biology
TEXT: *Biology*, **Campbell and Reece**
7th Edition
Chapter 5

Macromolecules Part I and II

Thematic Review Guide

PART I

1. Define the following:

a. monomer _____

_____

b. polymer _____

_____

c. condensation reaction _____

_____

d. hydrolysis _____

_____

2. Which foods do you think will enter the blood the quickest? Why?

_____

_____

3. What are the general roles of carbohydrates?

_____

_____

_____

4. List some monosaccharides with their molecular formulas.

_____

_____

5. *Double* sugars are called _____

List the monosaccharides that form each:

a. maltose_____

b. sucrose_____

c. lactose_____

6. Polymers of sugars form _____

7. Which forms of polysaccharide is best for each function:

a. Strength of structure _____

b. Storage and sugar release _____

c. ***What theme is this addressing?*** _____

8. How does the alpha differ from the beta form of glucose and why is it significant to animals?

_____

_____

9. How do the role and structure of the following polysaccharides compare?

a. starch_____

b. glycogen_____

c. cellulose_____

10. Ninety percent of Asians, 75% of African-Americans, and a much smaller percent of Northern Europeans are lactose intolerant. Why do you suppose we see this pattern?

_____

_____

_____

PART II

1. What is the characteristic common to lipids? _____

_____

2. Lipids are synthesized by the chemical reaction _____

and broken down by the reaction _____

3. Explain how the structure and properties of fats cause it to be hydrophobic?

_____

_____

4. State at least two differences between saturated and unsaturated fats.

a. _____

_____

b. _____

_____

5. How do phospholipids interact in an aqueous solution?

6. Make a diagram of the phospholipid interactions that form cell membranes.

7. Sketch the common building block of steroids.

8. List several functions of proteins.

9. What are the three properties used to classify amino acids?

10. Sketch two amino acids side-by-side, on one of them label the functional groups, and then show how the two can be joined together.

11. What determines the primary structure of a protein? _____

12. Describe the four levels of protein structure:

a. Primary _____

_____

b. Secondary _____

_____

c. Tertiary _____

_____

d. Quaternary _____

_____

13. What happens to a protein during denaturation? _____

_____

14. What are the building blocks of nucleic acids? _____

15. Briefly describe two functions of DNA in the cell.

a. _____

_____

b. _____

_____

AP Biology Exam Checkpoint

16. Which list of components characterizes **RNA**?

(A) a PO_3 group, deoxyribose, and uracil
(B) a PO_3 group, ribose, and uracil

(C) a PO_3 group, ribose, and thymine
(D) a PO_2 group, deoxyribose, and uracil
(E) a PO_2 group, deoxyribose, and thymine