

Biology

Name: _____

Structure & Function of Macromolecules

Date: _____ Hour: _____

1. What are the four classes of macromolecules? _____

2. What does the term “colossus” mean when describing the size of macromolecules? _____
3. What two things are considered “inseparable” in the passage? _____

4. What does “polys” mean? _____
5. Define monomer: _____

6. Even though nature of monomers may change, what is basically the same in all cases? _____

7. What two parts are contributed to a bond made through a condensation reaction? _____

8. What helps condensation reactions speed up? _____
9. What is an example of hydrolysis going on in your body right now? _____

10. Released monomers of digestion are absorbed into what area of the body? _____
11. In the 1950’s, who discovered several of the basic structural features of proteins? _____

12. What color are the water molecules in Figure 5.2? _____
13. What type of difference is between unrelated individuals? _____

14. About how many monomers are common and make polymers? _____
15. The authors say that building polymers like using letters of the alphabet to do what? _____

16. The simplest carbohydrate is called: _____

17. What does "sacchar" mean? _____
18. What is the most common monosaccharide? _____
19. Most sugars have names that end in what? _____
20. What is the range of carbons in a carbon skeleton for a carbohydrate? _____
21. What does the term "asymmetric" mean? _____

22. Describe in your own words the difference in structures between glucose and galactose: _____

23. What shape do most sugars have when in aqueous solutions? _____
24. What is one purpose for monosaccharides in the body? _____

25. What is the name of a covalent bond formed by a dehydration reaction? _____
26. What two monosaccharides make up lactose? _____
27. What are two purposes for polysaccharides? _____

28. Define starch: _____

29. Where do plants store starches? _____
30. What are three examples of sources of starch in the human diet? _____
31. Where is glycogen found in animals? _____
32. How fast will the glycogen bank be depleted in humans unless more food is eaten? _____

33. What is cellulose? _____
34. What is the most abundant organic compound on Earth? _____
35. What shape is starch? Cellulose? _____

36. If humans cannot digest cellulose, how does it leave our bodies? _____
37. The first compartment of a cows stomach is called the: _____
38. About how many cellulose molecules come together to form microfibril in Figure 5.8? _____

39. What does it mean when they say “lipids have little to no affinity for water”? _____

40. What are the two parts of a fat? _____
41. How many carbons are in glycerol? _____
42. How many carbons are usually in a fatty acid? _____
43. Where can you find the name triglyceride on everyday products? _____
44. What do the terms unsaturated and saturated fats refer to? _____

45. What happens to the shape of the fatty acid when a double bond occurs? _____
46. What state of matter are animal fats? _____
47. What state of matter are plant and fish fats? _____
48. What are two examples of hydrogenated vegetable oils? _____

49. Describe atherosclerosis: _____

50. What are two purposes for adipose tissue? _____

51. What is the difference between phospholipids and other fats? _____

52. What is the difference between hydrophobic and hydrophilic? _____

53. Draw a phospholipid bilayer:

54. How many rings are found in a steroid structure? _____

55. Draw a cholesterol molecule:

56. What does the name "protein" mean in Greek? _____

57. List five reasons for proteins:

a. _____

b. _____

c. _____

d. _____

e. _____

58. What is the name for polymers of amino acids? _____

59. Draw an amino acid:

60. Name 5 different amino acids: _____

61. What are different ways in which the amino acids are grouped? _____

62. Define peptide bond: _____
