

STUDY GUIDE - Unit 2 - BIOCHEMISTRY (Chapter 2)

Your study guide is not only an excellent guide to preparation for your exams, it is also a homework assignment. Your completed study guide work will be handed in on the day of each Unit Exam.

Words to know:

atom	carbohydrate	dehydration synthesis	substrate
ion	element	inorganic	organic
solute	structural formula	protein	lipid
nucleic acid	molecule	hydrolysis	catalyst
isotopes	atomic number	mass number	active site
ionic bond	covalent bond	hydrogen bond	solvent
monosaccharides	disaccharides	polysaccharides	fats
glycerol	fatty acid	phospholipids	steroid
enzyme	amino acid	nucleotides	peptide bond

A. Review Questions: Chapter 2 Assessment (page 56-57) #1-32 In the space below, answer the assessment on pages 56-57 #1-8, #10-15, #18-22, and #25-29.

1.	5.	10.	14.	20.	26.
2.	6.	11.	15.	21.	27.
3.	7.	12.	18.	22.	28.
4.	8.	13.	19.	25.	29.

B. Questions to answer:

1) List the four most abundant elements in the human body:

2) Fill out the chart below

Subatomic Particle of Atom	Charge (+, -, 0)	Where located in atom

3) Why is a complete atom electrically neutral? _____

4) How is an ion formed? _____

5) Distinguish between an ionic bond and a covalent bond. _____

6) a. Explain what pH measures. _____

b. Identify if the following solutions are **ACID, BASE, or NEUTRAL**

i. Monster Energy drink pH 2.7 _____

iii. Milk of Magnesia pH 13.5 _____

ii. Seawater pH 8.0 _____

iv. Tomatoes pH 4.5 _____

7) Fill in the following chart and use the periodic table in Appendix E page A-24 in your book:

Element	Symbol	# of pro.	# of elec.	# of neut.	Atomic #	Mass # / Atomic wt.
Cobalt- 59						
Radium-226						
Titanium- 48						

8) In a mixture of Kool-Aid, what is the solute? _____ What is the solvent? _____

9) a. In the chemical equation below, identify the **REACTANTS** and the **PRODUCTS**.



b. What does the arrow represent in the chemical equation? _____

10) a. Define polarity: _____

b. What molecule exhibits polarity? _____

11) What are hydrogen bonds? _____

12) List and describe at least 3 properties of water that are exhibited due to hydrogen bonding and polarity:

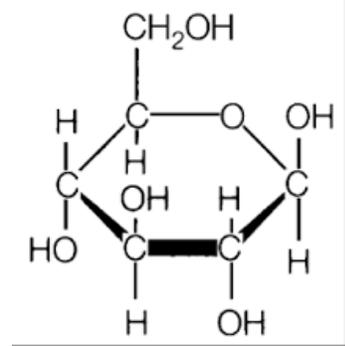
13) Looking at the picture to the right,

a. Identify the monomer _____

b. List an example of the monomer _____

c. What is the polymer? _____

d. Name 2 functions of this polymer _____



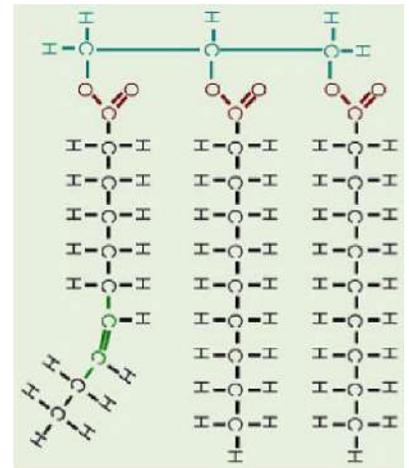
14) Looking at the picture to the right,

a. Identify the 2 monomers _____

b. What is the polymer? _____

c. What are the functions of this polymer? _____

d. Is this a saturated or unsaturated fat? How can you tell? _____



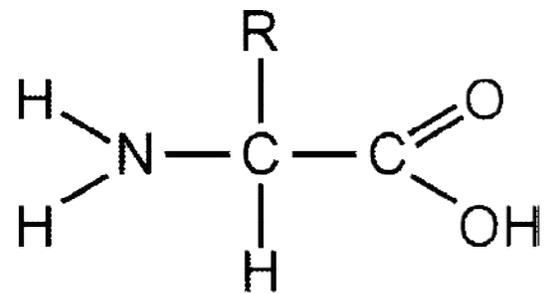
15) Looking at the picture to the right,

a. Identify the monomer _____

b. What is the polymer? _____

c. Identify 2 functions of this biomolecule

d. What specific bond forms between amino acids to make proteins? _____



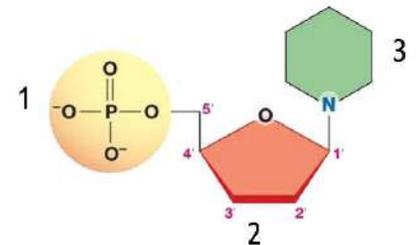
16) Looking at the picture to the right,

a. Identify the monomer? _____

b. What is the polymer? _____

c. What are the 2 examples of this polymer? _____

d. Describe 2 functions of this polymer.



17) Distinguish between saturated and unsaturated fats. Give an example of each.

• Saturated fat: _____

Example(s): _____

• Unsaturated fat: _____

Example(s): _____

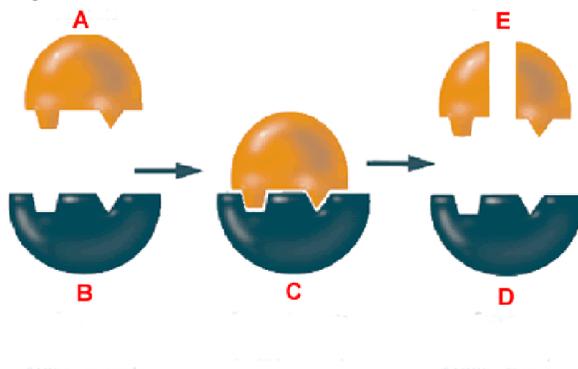
18) What is meant by the term “denatured”? What conditions cause this?

19) Distinguish between a “dehydration synthesis” reaction and a “hydrolysis” reaction.

20) Define the following terms:

- Enzyme: _____
- Substrate: _____
- Active site: _____

21) In the diagram below, identify the **SUBSTRATE**, **ENZYME**, **ACTIVE SITE**, and **PRODUCT**.



22) (a) How does temperature affect enzymes? _____

(b) How does pH affect enzymes? _____

Ways to Study/Review

1. Review all lecture notes and readings.
2. Answer the questions at the end of EACH section AND chapter.
3. Study with a friend (not just socialize).
4. Look over old study guides.
5. Flashcards
6. Putting lecture notes into your own words
7. Make yourself a test and take it. Also, have a friend make a test too and exchange tests.
8. Come into class with questions!
9. Review a little each day.... Do not cram the night before!



My child has studied this study guide for at least 20 minutes (2 bonus points)

(Parent/guardian signature)

Review worksheets: Reading Guides 2.1, 2.2, 2.3 and 2.4 and ALL 4 lecture notes.