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EOR 3

Chapter 3 Reading Guide



Name _____



Intro (read p33) ###

A) What are the symptoms of **lactose intolerance** and how **frequent** is it for different ethnic groups in the US?

B) Explain exactly causes a person to be lactose intolerant?

C) Discuss 4 strategies lactose intolerant individuals use to avoid/minimize their symptoms?

3.1

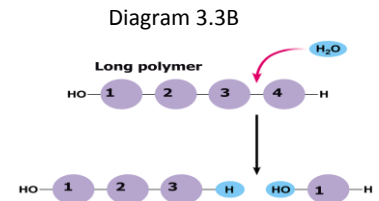
A) Define what constitutes an **organic** compound?

B) Draw diagrams of 3 example organic compounds ... each one having a different structural shape (i.e., branching, double bonds, ring)

3.3 ###

A) List the 4 main macromolecules of life ?

B) Compare a **monomer** to a **polymer**?



C) Check all that apply for each type of chemical reaction

	Hydrolysis Reaction	Dehydration Reaction
makes polymers from monomers		
add water to monomers		
removes water from polymers		
breaks polymers into monomers		
requires the use of enzymes		
lactose intolerant people cannot do this		
Diagram 3.3B		

3.4 ###

A) List 2 **monosaccharide** examples

B) If carbohydrates have a molecular formula ratio of $C_1H_2O_1$, then write the formula for a monosaccharide with **5 carbon** atoms?

3.6 ###

A) Explain how **high-fructose corn syrup** is made from corn and why is it used in sodas instead of pure glucose?

3.7

A) What do the carbohydrates **starch**, **glycogen**, **chitin** and **cellulose** have in common?

B) Which of the 4 carbohydrates above is commonly known as "**insoluble fiber**" and WHY is it **NOT** a nutrient for humans?

3.8 ###

A) What chemical trait do all **lipids** share in common?

B) A typical fat molecule is made from **1** _____ and **3** _____ ? (see figure 3.8C)

C) Explain the difference between a **saturated** and **unsaturated** fat?

D) List examples for the 4 types of Lipids found commonly in living cells?

3.9

A) Explain 2 ways that animals use **cholesterol** lipids in their bodies?

3.11 Fill out the table below to summarize the 8 types of **proteins** ###

Protein type	FUNCTION or job in a cell	Example
1) enzyme		
2) structural protein		
3) contractile protein		
4) defensive protein		
5) signal protein		
6) receptor protein		
7) transport protein		
8) storage protein		

3.12

A) What is the **monomer** of a protein called and how many different **varieties** do they come in?

3.13 ###

A) Explain what happens to a protein if it becomes **denatured**?

3.16

A) What type of polymer molecule are “**genes**” made from and what is the monomer of this type of molecule?