

1. Name the above structure. ATP
2. Draw a rectangle around the nitrogenous base portion and label it. adenine
3. Draw a polygon around the sugar part and label it. ribose / pentose sugar
4. What is left? 3 phosphate
5. Why is the left over part important? _____

Short Answer

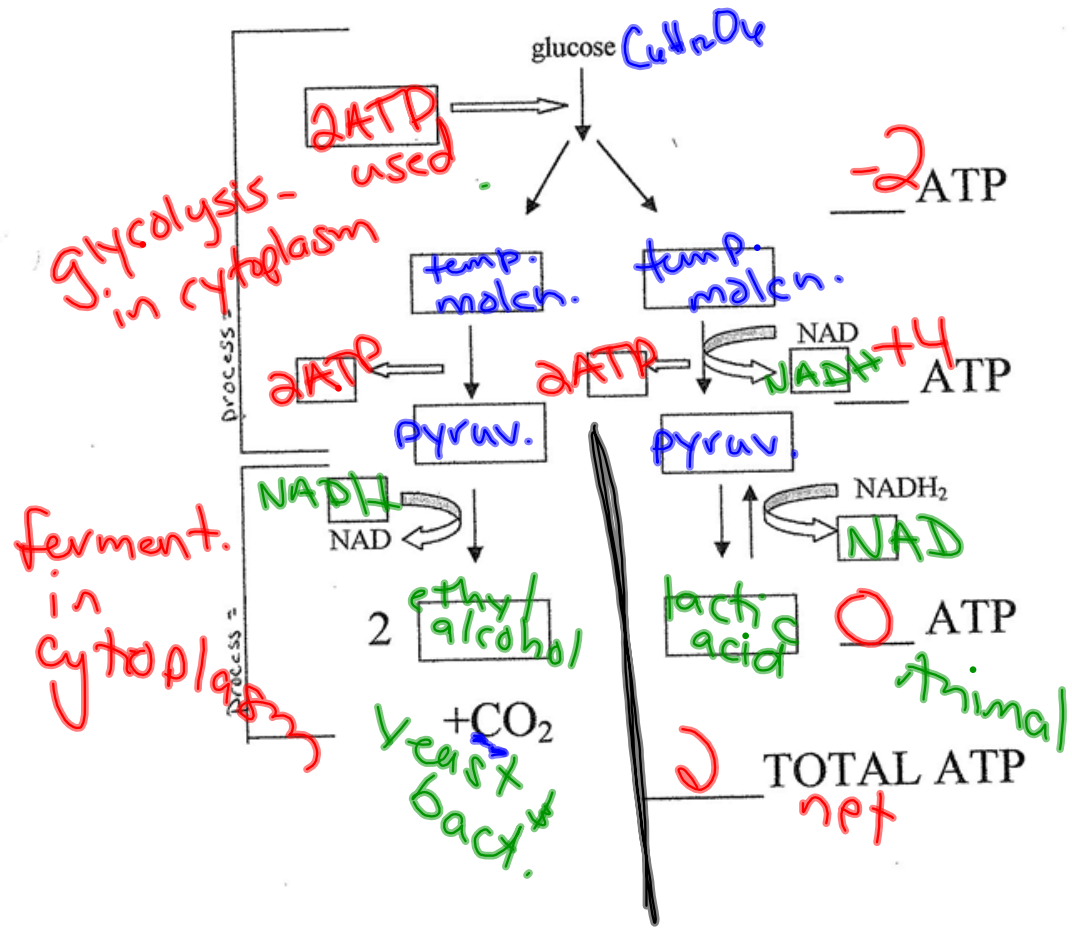
The splitting of glucose is called glycolysis. This process occurs in the cytoplasm of a cell. This process begins with an anaerobic reaction and 2 (a number) ATPs are used/made (circle one). exergonic

In anaerobic respiration, glucose is converted first to two molecules of pyruvate pyruvic acid. The hydrogen atoms that come from this compound are accepted by NAD, a coenzyme. This whole process makes/uses (circle one) 4 (a number) ATPs. This substance is then broken down further into either to two molecules of lactic acid or two molecules of ethyl alcohol and carbon dioxide. When either of these two substances are made, 0 (a #) ATP(s) are made/used (circle one).

"RESPIRATION MESS"	
BREIOCA	a phase
NTXIDOOIA	Chemical reaction
CLEGSOU	source of energy
VERAYPUT	form of an acid

*aerobic
oxidation
glucose
pyruvate*

Anaerobic Respiration



Dayger
Cellular Respiration

Name: _____

2014

After the items below place the word below which best describes the item.

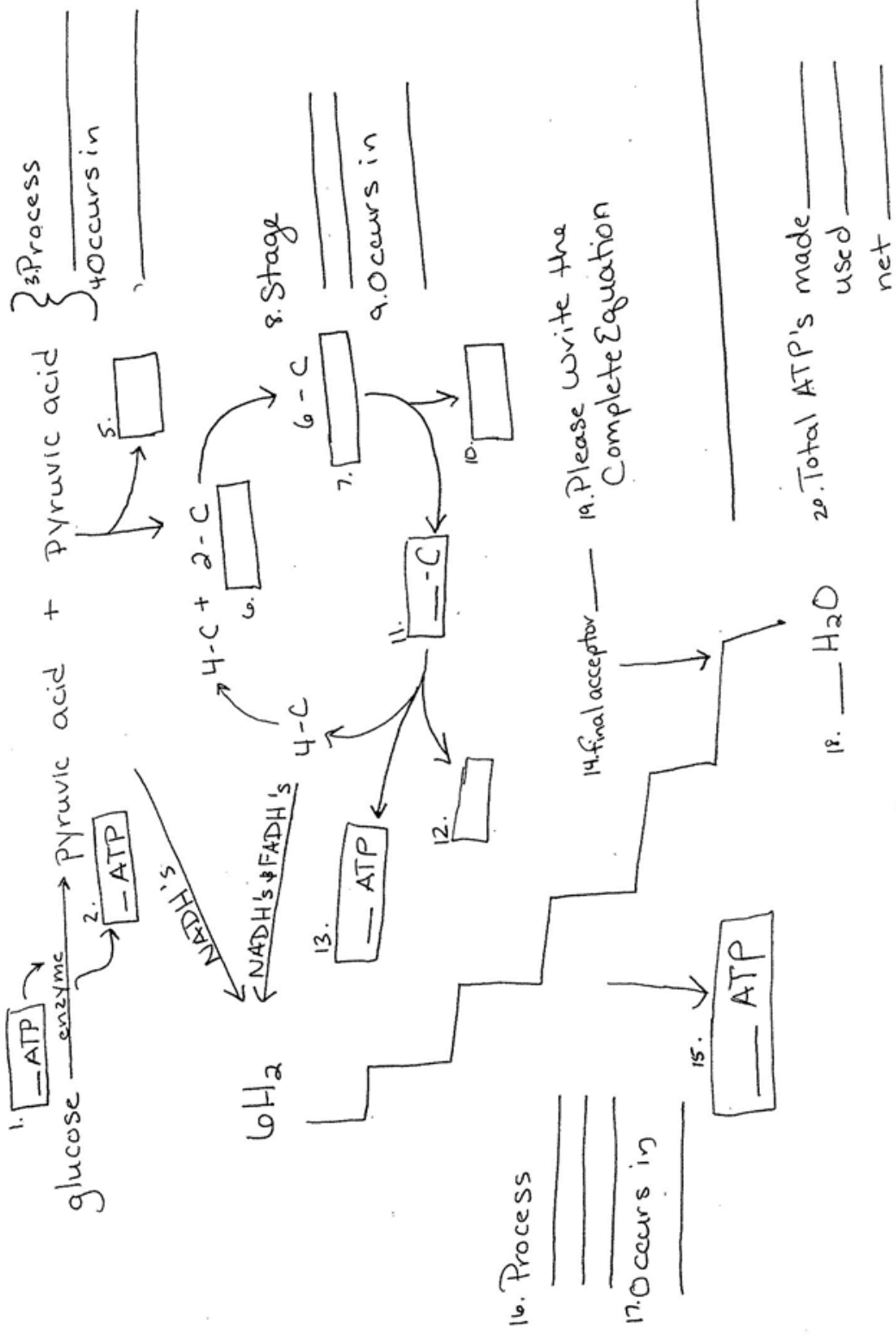
- A. Aerobic respiration
- B. Anaerobic respiration
- C. Both aerobic and anaerobic respiration

1. A occurs in the mitochondria
2. C goes on 24 hours a day
3. B produces alcohol as an end product
4. C produces carbon dioxide as a waste product *aerob/ferm*
5. C uses glucose as a raw material
6. C uses enzymes for chemical reactions
7. photosy produces oxygen as a product of the reaction
8. C occurs in animal muscle cells after long periods of exercise *(lactic acid)*
9. A uses oxygen as a raw material
10. B causes bread dough to rise
11. A manufactures vast amounts of ATP
12. C uses released ATP
13. A water is involved in this set of reactions
14. C energy storage reaction
15. B produces ATP in yeast cells

Fill-in's

Aerobic respiration consists of two phases: one _____ and one _____. Activation of the glucose molecule uses two molecules of _____. The anaerobic phase of respiration produces _____ ATP while requiring _____ ATP molecules as activators. In the aerobic phase two molecules of _____ are converted to carbon dioxide, water and the formation of _____ ATP molecules. This occurs through three different stages; the first being _____, the second _____ cycle, and the last one, _____ chain. The net gain of ATP from the complete breakdown of glucose is _____. The hydrogen acceptor in respiration is _____ resulting in the formation of _____.

Aerobic Respiration Review



Name _____

Date _____

CHAPTER REVIEW

CHAPTER

6

Know the Terms

Complete the following paragraphs using the list of words below.

anaerobic
coenzymes
oxygen
fermentation
chemical bonds

chemical energy
NAD⁺
reduction
Krebs cycle
oxidation

aerobic
glycolysis
ATP
water
cellular respiration

FAD
glucose
mitochondria
ADP
carbon dioxide

All things require (1) to maintain life. This is contained within (2) in nutrient molecules. It is released within cells through the process of (3). There are two types of the process. The first requires the presence of (4) and is called (5). The second does not require this and is called (6). Both of these processes result in the release of energy that can be used to change (7) into (8), which is a temporary energy storage molecule.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

The organic compound from which cells obtain most of their energy is (9). One molecule of this can yield up to 36 molecules of ATP. This occurs through a series of reactions involving the transfer of electrons between atoms. If an atom gains electrons, it is called (10). If it loses electrons, it is called (11). These reactions are controlled by enzymes. Working along with these enzymes are (12), which act as hydrogen acceptors. Two examples of these, involved with cellular respiration, are (13) and (14).

15. _____

16. _____

17. _____

18. _____

19. _____

The initial step in this entire process involves the splitting of glucose. This is called (15). This process, followed by the conversion of pyruvic acid to ethyl alcohol, is called (16). Cells that can use environmental oxygen during respiration can extract more energy from the molecules and do so by running the end products of the previous process through the (17), which occurs in the (18) in the cell. The products of this process go to the electron transport chain where more energy is extracted. The final end product of this process is (19).

15. _____

16. _____

17. _____

18. _____

Name _____

	PHOTO-SYNTHESIS	ANAEROBIC		AEROBIC
		LACTIC ACID FERMENT	ALCOHOLIC FERMENT	
Reactants				
End products				
Formula				
Amnt of Energy used				
What is happening? (in words)				
Location in Cell				
When does it occur? (time of day)				
Type of Organism				

Name _____

Glycolysis

To split glucose into pyruvate, a cell must first use the energy of two ATP molecules. What is the net yield of energy-storing molecules from glycolysis?

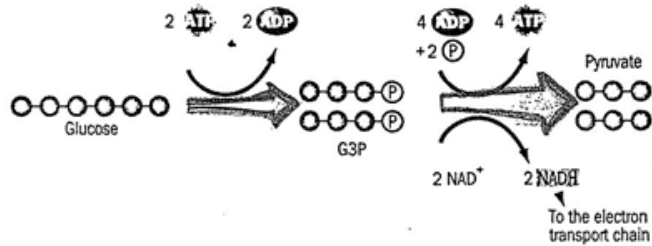
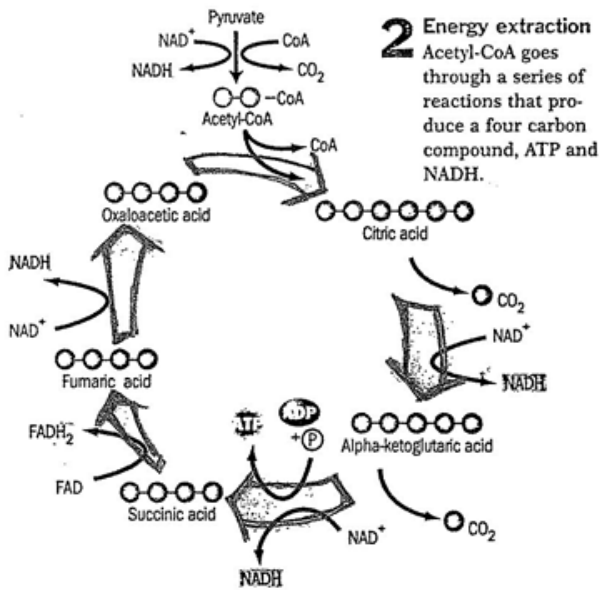


FIGURE 4.13

Krebs Cycle

1 Pyruvate change

Pyruvate is transformed into acetyl-CoA, losing a carbon in the form of CO₂. Acetyl-CoA enters the cycle.



2 Energy extraction

Acetyl-CoA goes through a series of reactions that produce a four carbon compound, ATP and NADH.

3 Completing the cycle

A four-carbon compound is recycled into a compound that can react with acetyl-CoA. FADH₂ and NADH are formed.