

## Chapter 9 Cellular Respiration

## Chapter Test B

## Multiple Choice

Write the letter that best answers the question or completes the statement on the line provided.

- \_\_\_\_\_ 1. Which of the following is released during cellular respiration?
  - a. oxygen
  - b. air
  - c. energy
  - d. lactic acid
- \_\_\_\_\_ 2. Cellular respiration releases energy by breaking down
  - a. food molecules.
  - b. ATP.
  - c. carbon dioxide.
  - d. water.
- \_\_\_\_\_ 3. Which of these is a product of cellular respiration?
  - a. oxygen
  - b. water
  - c. glucose
  - d. all of the above
- \_\_\_\_\_ 4. Which of these processes takes place in the cytoplasm of a cell?
  - a. glycolysis
  - b. electron transport
  - c. Krebs cycle
  - d. all of the above
- \_\_\_\_\_ 5. Glycolysis provides a cell with a net gain of
  - a. 2 ATP molecules.
  - b. 4 ATP molecules.
  - c. 18 ATP molecules.
  - d. 36 ATP molecules.
- \_\_\_\_\_ 6. Lactic acid fermentation occurs in
  - a. bread dough.
  - b. any environment containing oxygen.
  - c. muscle cells.
  - d. mitochondria.
- \_\_\_\_\_ 7. The two main types of fermentation are called
  - a. alcoholic and aerobic.
  - b. aerobic and anaerobic.
  - c. alcoholic and lactic acid.
  - d. lactic acid and anaerobic.
- \_\_\_\_\_ 8. In the presence of oxygen, glycolysis is followed by
  - a. lactic acid fermentation.
  - b. alcoholic fermentation.
  - c. photosynthesis.
  - d. the Krebs cycle.
- \_\_\_\_\_ 9. Cellular respiration is called an aerobic process because it requires
  - a. light.
  - b. exercise.
  - c. oxygen.
  - d. glucose.

- \_\_\_\_10. The starting molecule for the Krebs cycle is  
 a. glucose. c. pyruvic acid.  
 b. NADH. d. coenzyme A.
- \_\_\_\_11. In eukaryotes, electron transport occurs in the  
 a. mitochondria. c. cell membrane.  
 b. chloroplasts. d. cytoplasm.
- \_\_\_\_12. The energy of the electrons passing along the electron transport chain is used to make  
 a. lactic acid. c. alcohol.  
 b. citric acid. d. ATP.
- \_\_\_\_13. When the body needs to exercise for longer than 90 seconds, it generates ATP by carrying out  
 a. lactic acid fermentation.  
 b. alcoholic fermentation.  
 c. cellular respiration.  
 d. glycolysis.
- \_\_\_\_14. Unlike photosynthesis, cellular respiration occurs in  
 a. animal cells only. c. all but plant cells.  
 b. plant cells only. d. all eukaryotic cells.
- \_\_\_\_15. The products of photosynthesis are the  
 a. products of cellular respiration.  
 b. reactants of cellular respiration.  
 c. products of glycolysis.  
 d. reactants of fermentation.

## Completion

Complete each statement on the line provided.

16. Glycolysis converts glucose into two molecules of \_\_\_\_\_.
17. Based on Figure 9-1, \_\_\_\_\_ ATP molecules are formed by fermentation.
18. The \_\_\_\_\_ is a series of carrier proteins.
19. The body gets rid of lactic acid in a chemical pathway that requires \_\_\_\_\_.
20. Based on Figure 9-1, the complete breakdown of glucose through cellular respiration results in the production of \_\_\_\_\_ ATP molecules.

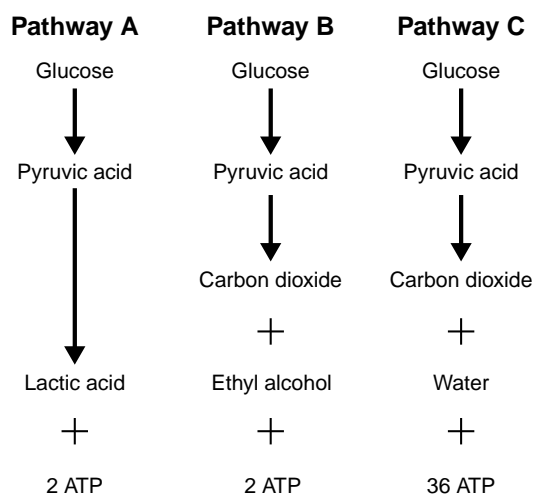


Figure 9-1

**Short Answer**

*In complete sentences, write the answers to the questions on the lines provided.*

21. What is cellular respiration?

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22. What happens during glycolysis?

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23. Why is the Krebs cycle also known as the citric acid cycle?

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24. What is the main function of the electron transport chain?

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25. What roles does oxygen play in photosynthesis and in cellular respiration?

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(Test B continues on page 116)

## Using Science Skills

Use the diagram below to answer the following questions on the lines provided.

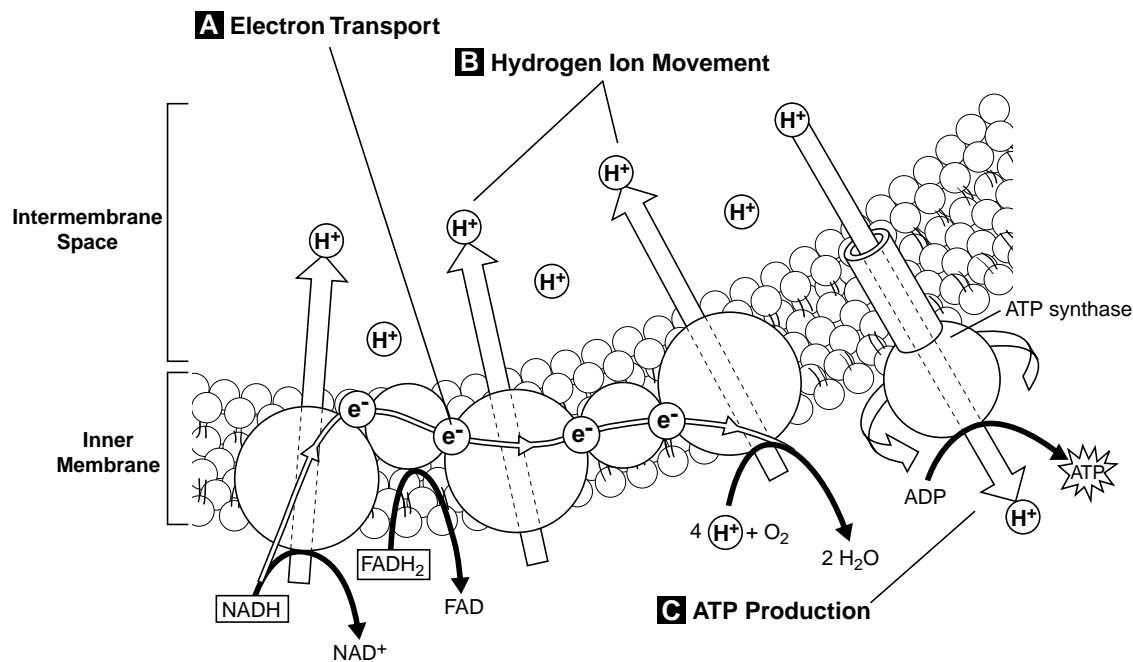


Figure 9-2

26. **Interpreting Graphics** What process does Figure 9-2 show?

\_\_\_\_\_

27. **Interpreting Graphics** Look at Figure 9-2. Where do the electrons moving along the inner membrane come from?

\_\_\_\_\_  
\_\_\_\_\_

28. **Interpreting Graphics** Where do the electrons moving along the inner membrane in Figure 9-2 end up?

\_\_\_\_\_

29. **Inferring** Look at the arrows and  $H^+$  ions in Figure 9-2. Which direction do most of the  $H^+$  ions move in? What is the result of this movement?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

30. **Interpreting Graphics** ATP synthase is an enzyme. Find ATP synthase in Figure 9-2. What reaction does ATP synthase catalyze when an  $H^+$  ion passes through its channel?

\_\_\_\_\_  
\_\_\_\_\_