

- a. diffusion
 - b. osmosis
 - c. facilitated diffusion
 - d. active transport
- ___ 12. An animal cell that is surrounded by fresh water will burst because the osmotic pressure causes
- a. water to move into the cell.
 - b. water to move out of the cell.
 - c. solutes to move into the cell.
 - d. solutes to move out of the cell.
- ___ 13. All of the following are examples of cell specialization EXCEPT
- a. a pancreatic cell that produces protein-digesting enzymes.
 - b. muscle cells that control movement of materials in the body
 - c. a prokaryotic cell that carries out photosynthesis.
 - d. a red blood cell that carries oxygen.
- ___ 14. Which of the following is an example of an organ?
- a. heart
 - b. epithelial tissue
 - c. digestive system
 - d. nerve cell
- ___ 15. All of the following are types of tissues EXCEPT
- a. muscle.
 - b. connective.
 - c. digestive.
 - d. nerve.
- ___ 16. An organ system is a group of organs that
- a. are made up of similar cells.
 - b. are made up of similar tissues.
 - c. work together to perform a specific function.
 - d. work together to perform all the functions in a multicellular organism.
- ___ 17. Organisms that cannot make their own food and must obtain energy from the foods they eat are called
- a. autotrophs.
 - b. heterotrophs.
 - c. thylakoids.
 - d. plants.
- ___ 18. Plants take in the sun's energy by absorbing
- a. high-energy sugars.
 - b. chlorophyll *a*.
 - c. chlorophyll *b*.
 - d. sunlight.
- ___ 19. Where in the chloroplast is chlorophyll found?
- a. in the stroma
 - b. in the thylakoid
 - c. in the ATP
 - d. in the glucose
- ___ 20. Which of the following is false?
- a. A chloroplast contains stroma.
 - b. A stroma contains a thylakoid.
 - c. A granum contains several thylakoids.
 - d. A thylakoid contains chlorophyll.
- ___ 21. Which of the following is inside the thylakoid membrane?
- a. electron transport chain
 - b. photosystem I
 - c. ATP synthase
 - d. all of the above
- ___ 22. Why does the inside of the thylakoid membrane become positively charged during the light-dependent reactions?
- a. H⁺ ions are released as water splits.
 - b. ATP synthase allows H⁺ ions to pass through the membrane.
 - c. ATP synthase produces ATP from ADP.
 - d. Carbon dioxide builds up in the stroma.

- ___ 23. Where are photosystems I and II found?
a. in the stroma
b. in the thylakoid membrane
c. in the Calvin cycle
d. all of the above
- ___ 24. The Calvin cycle is another name for
a. light-independent reactions.
b. light-dependent reactions.
c. photosynthesis.
d. all of the above
- ___ 25. What is a product of the Calvin cycle?
a. oxygen gas
b. ATP
c. high-energy sugars
d. carbon dioxide gas
- ___ 26. What is the correct equation for cellular respiration?
a. $6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{Energy}$
b. $6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 + \text{Energy} \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$
c. $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow 6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 + \text{Energy}$
d. $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{Energy} \rightarrow 6\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6$
- ___ 27. The starting molecule for glycolysis is
a. ADP.
b. pyruvic acid.
c. citric acid.
d. glucose.
- ___ 28. Which of the following is NOT a product of glycolysis?
a. NADH
b. pyruvic acid
c. ATP
d. glucose
- ___ 29. 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.
- ___ 30. The conversion of pyruvic acid into lactic acid requires
a. alcohol.
b. oxygen.
c. ATP.
d. NADH.
- ___ 31. Cellular respiration is called an aerobic process because it requires
a. light.
b. exercise.
c. oxygen.
d. glucose.
- ___ 32. The Krebs cycle does not occur if
a. oxygen is present.
b. fermentation occurs.
c. glycolysis occurs.
d. carbon dioxide is present.
- ___ 33. The Krebs cycle starts with
a. lactic acid and yields carbon dioxide.
b. glucose and yields 32 ATPs.
c. pyruvic acid and yields lactic acid or alcohol.
d. pyruvic acid and yields carbon dioxide.
- ___ 34. All of the following are sources of energy during exercise EXCEPT
a. stored ATP.
b. alcoholic fermentation.
c. lactic acid fermentation.
d. cellular respiration.
- ___ 35. Which process does NOT release energy from glucose?
a. glycolysis
c. fermentation

b. photosynthesis

d. cellular respiration

Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

- ___ 36. If a cell contains a nucleus, it must be a prokaryote. _____
- ___ 37. Ribosomes stud the surface of rough endoplasmic reticulum. _____
- ___ 38. Cilia and flagella are made of protein filaments called endoplasmic reticulum. _____
- ___ 39. The cytoskeleton helps to move organelles within the cell. _____
- ___ 40. Water, carbon dioxide, oxygen, and some other substances can pass through the cell wall.

- ___ 41. There is a division of labor among the cells of multicellular organisms. _____
- ___ 42. ADP is one of the principal chemical compounds that living things use to store energy.

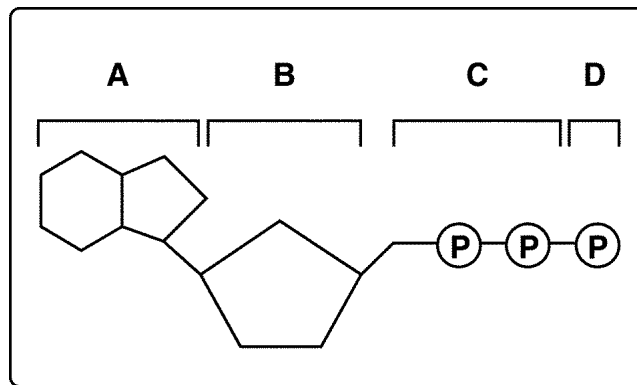


Figure 8-1

- ___ 43. The substance represented in Figure 8-1 is called ATP. _____
- ___ 44. If a plant and a burning candle are placed under a bell jar, the candle will burn because the plant gives off carbon dioxide. _____
- ___ 45. If you were to isolate the chloroplast from a plant, it would appear green. _____
- ___ 46. Cellular respiration releases energy by breaking down glucose in the presence of carbon dioxide.

- ___ 47. The products of glycolysis are 2 ATP, 2 NADH, and 2 pyruvic acid molecules.

- ___ 48. The Krebs cycle releases energy in the form of ATP. _____

____ 49. NADH and FADH₂ carry electrons from the Krebs cycle to the electron transport chain.

Completion

Complete each statement.

50. Enzymes in the _____ attach carbohydrates and lipids to proteins.
51. Large molecules such as glucose that cannot cross the lipid bilayer can still move across the membrane with a concentration gradient by _____.
52. Photosynthesis uses the energy of sunlight to convert water and carbon dioxide into oxygen and _____.

Short Answer

53. What does the cell theory say?

Other

USING SCIENCE SKILLS

A student put together the experimental setup shown below. The selectively permeable membrane is permeable to both types of solute molecules shown.

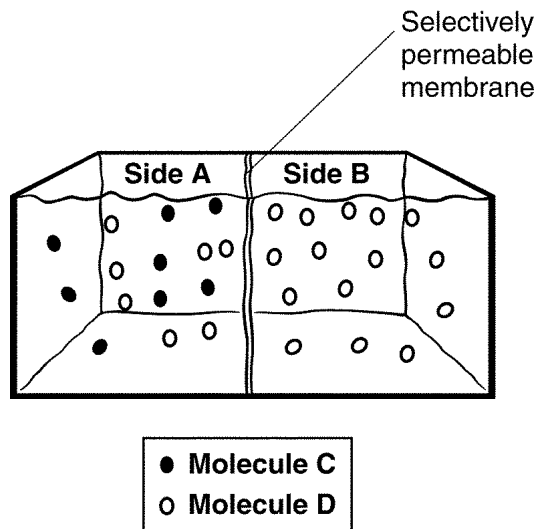


Figure 7-4

54. **Predicting** Describe the movement of the C molecules on side A of the apparatus shown in Figure 7-4. What will happen to these molecules over time?

Essay

55. Compare prokaryotes with eukaryotes. Give an example of each type

