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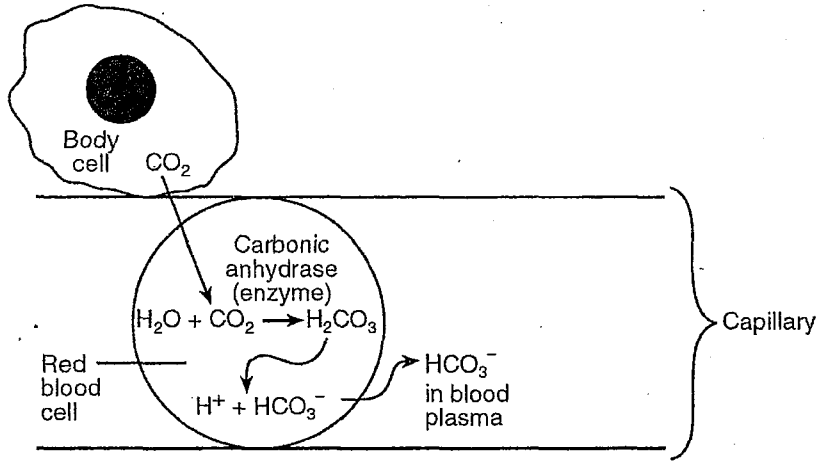
Respiration Practice Questions

1. Explain how carbohydrates provide energy for life functions.

The energy from glucose gets stored in ATP molecule → energy released when last

2. Base your answer to the following question on the diagram below, which illustrates a transport pathway of CO₂ in the human body, and on your knowledge of biology.

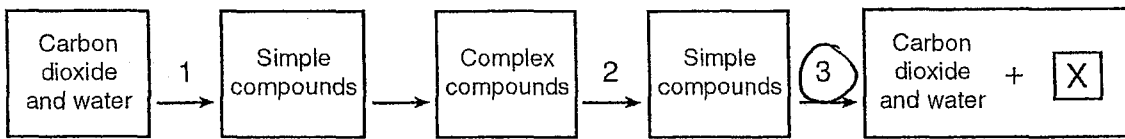
phosphate breaks.



Identify the cellular process that most likely produced the CO₂ in the body cell.

aerobic respiration

Base your answers to questions 3 and 4 on the diagram below and on your knowledge of biology. The arrows in the diagram represent biological processes.



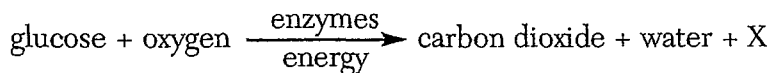
3. Identify process 3.

Aerobic Respiration

4. Identify what letter X represents.

ATP

Base your answers to questions 5 and 6 on the word equation below.



5. Name the process represented by the equation.

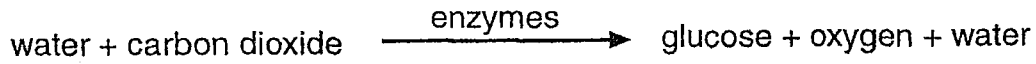
Aerobic Respiration

5. Name the molecule represented by letter X.

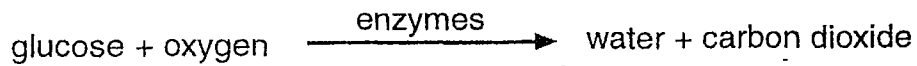
ATP

7. Base your answer to the following question on the summary equations of two processes below.

Photosynthesis



Respiration



a Choose one of the processes.

Respiration

b Identify the source of the energy in the process you chose.

Glucose

c Identify where the energy ends up at the completion of that process.

ATP

8. Base your answer to the following question on the information below and on your knowledge of biology.

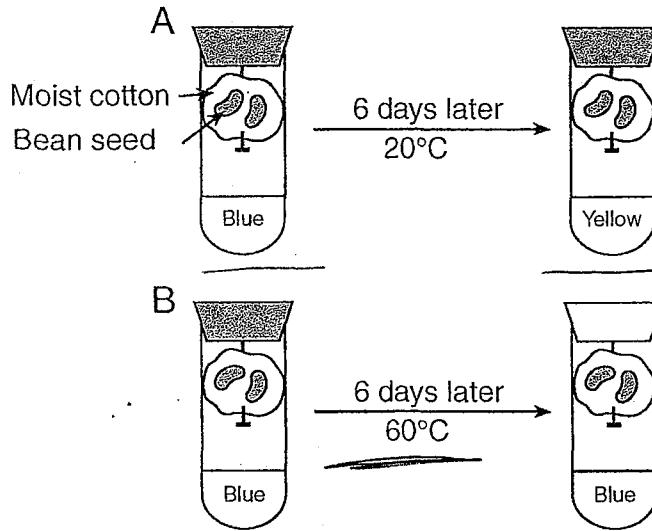
Carbon exists in a simple organic molecule in a leaf and in an inorganic molecule in the air humans exhale.

Identify the carbon-containing molecule that humans exhale and the process that produces it.

CO₂ → Aerobic Respiration

Base your answers to questions 9 and 10 on the information and diagram below and on your knowledge of biology.

Two test tubes, A and B, were set up as shown in the diagram below. Bromthymol blue, which turns from blue to yellow in the presence of carbon dioxide, was added to the water at the bottom of each tube before the tubes were sealed. The tubes were maintained at the temperatures shown for six days. (Average room temperature is 20°C.)



CO₂ being released, changes the indicator to yellow.

9. Identify the life process responsible for the change in tube A.

aerobic respiration

Explain how the temperature difference could lead to the different results in tubes A and B after six days.

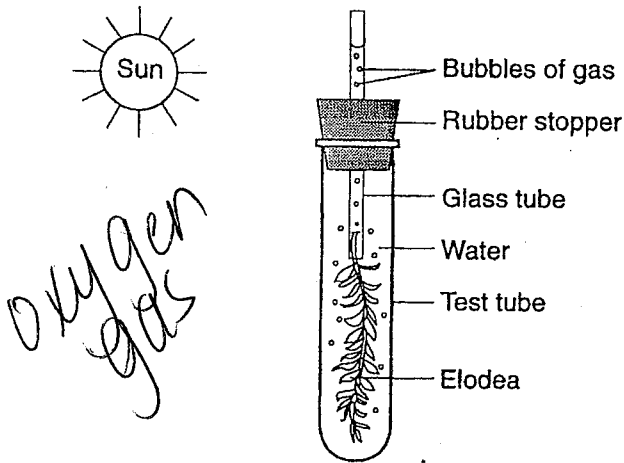
60°C denatures the enzymes responsible for respiration

11. Photosynthesis and respiration are two important processes. Discuss one of these processes and explain its importance to an organism. In your answer, be sure to:

- identify the process being discussed *Respiration*
- identify the organelle where this process occurs *Mitochondria*
- identify two raw materials necessary for this process *glucose + oxygen*
- identify one energy-rich molecule that is produced by this process *ATP*
- state how organisms use the energy-rich molecule that is produced *for life functions*
- state how a gas produced by this process is recycled in nature

CO₂ is used by plants for photosynthesis

12. Base your answer to the question on the diagram below and on your knowledge of biology. The diagram shows an investigation performed over a period of 12 hours.



The gas released in this investigation can be used in cellular respiration to form an energy-storing compound known as

- 1) H_2O
- 2) CO_2
- 3) adenosine triphosphate
- 4) deoxyribonucleic acid

13. Organisms make energy readily available by transferring the chemical bond energy of organic molecules to

- 1) mineral salts
- 2) adenosine triphosphate
- 3) light energy
- 4) nitrogenous wastes

14. Which process is directly responsible for the synthesis of adenosine triphosphate molecules?

- 1) digestion
- 2) excretion
- 3) respiration
- 4) circulation

15. Which three substances must be present in mitochondria for the process of aerobic respiration to take place?

- 1) chlorophyll, enzymes, and carbon dioxide
- 2) food molecules, enzymes, and carbon dioxide
- 3) oxygen, enzymes, and chlorophyll
- 4) oxygen, enzymes, and organic molecules

* Glucose

16. The presence of lactic acid in the cells of an animal's muscle tissue is an indication that the

- 1) animal is not adapted to the use of glucose
- 2) number of mitochondria in the muscle cells has increased
- 3) animal carries on a complex form of respiration during daylight hours

4) muscle cells have been active during a period of oxygen deficiency

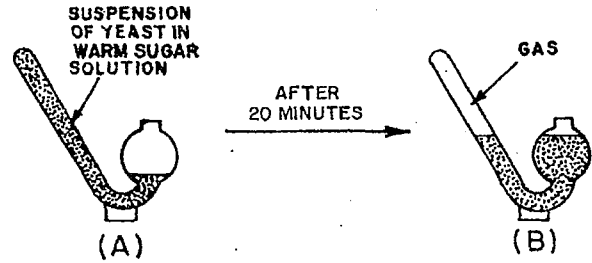
17. Anaerobic respiration is considered to be less efficient than aerobic respiration because

- 1) less lactic acid is formed during anaerobic respiration than aerobic respiration
- 2) anaerobic respiration requires more oxygen than aerobic respiration

3) the net gain of ATP molecules is less in anaerobic respiration than in aerobic respiration

- 4) less energy is required during anaerobic respiration than aerobic respiration

18. In the diagram below, what gas is probably present in fermentation tube B?



1) O_2

2) N_2

3) CO_2

4) CO

**demo*

19. Which word equation represents a type of fermentation?

1) glucose \rightarrow lactic acid + energy

2) glucose + oxygen \rightarrow carbon dioxide + water + energy

3) starch + water \rightarrow simple sugars

4) carbon dioxide + water \rightarrow glucose + oxygen + water

2 ATP

20. The production of alcohol by yeast cells is the result of



- 1) fermentation
- 2) aerobic respiration
- 3) budding
- 4) dehydration synthesis