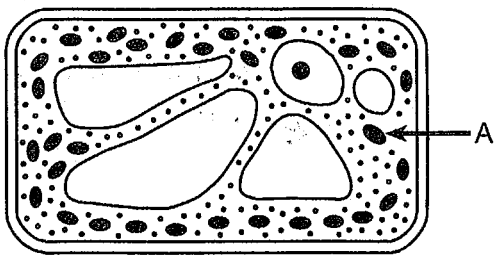
1. The diagram below represents a plant cell.



SUN

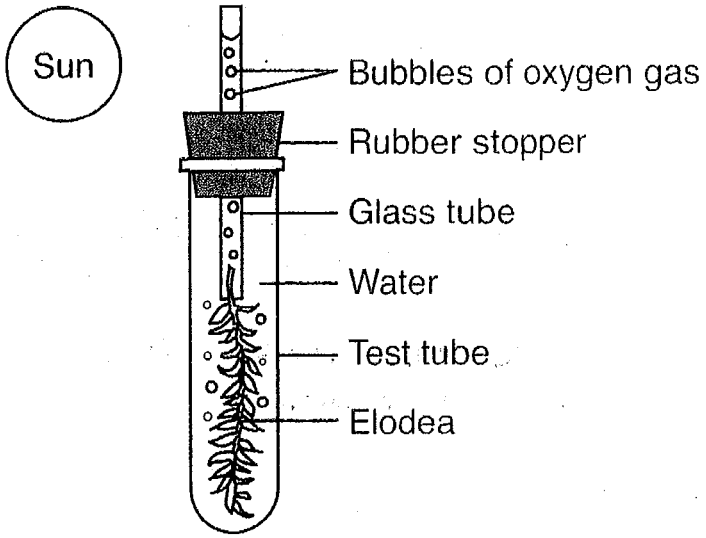
$CO_2 + H_2O \longrightarrow C_6H_{12}O_6 + O_2$

For the process of photosynthesis, the arrow labeled A would most likely represent the direction of movement of

(A) carbon dioxide, water, and solar energy
B) oxygen, sugar, and solar energy
C) carbon dioxide, oxygen, and heat energy
D) sugar, water, and heat energy

Base your answers to questions **2** and **3** on the information and diagram below and on your knowledge of biology.

A small water plant (elodea) was placed in bright sunlight for five hours as indicated below. Bubbles of oxygen gas were observed being released from the plant.



2. What substance did the plant most likely absorb from the water in order to produce the oxygen gas?

A) dissolved nitrogen
(B) carbon dioxide
C) an enzyme
D) a hormone

3. The bubbles of oxygen indicate that the plant is

(A) producing sugar
B) making protein
C) releasing energy from water
D) carrying on active transport

4. The energy used to obtain, transfer, and transport materials within an organism comes directly from

A) ATP
B) DNA
C) sunlight
D) starch

5. In the cells of the human body, oxygen molecules are used directly in a process that

(A) releases energy
B) digests fats
C) synthesizes carbohydrate molecules
D) alters the genetic traits of the cell

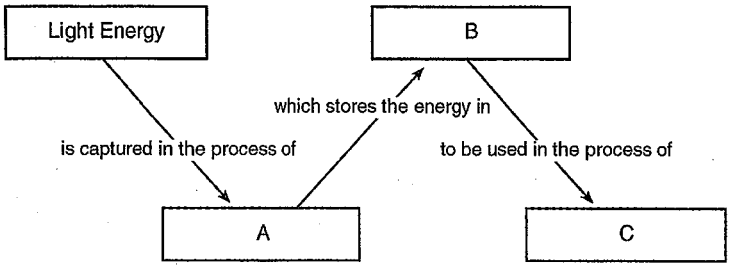
6. Energy from organic molecules can be stored in ATP molecules as a direct result of the process of

(A) cellular respiration
B) cellular reproduction
C) diffusion
D) digestion

7. In the transfer of energy from the Sun to ecosystems, which molecule is one of the first to store this energy?

A) protein
B) fat
C) DNA
(D) glucose

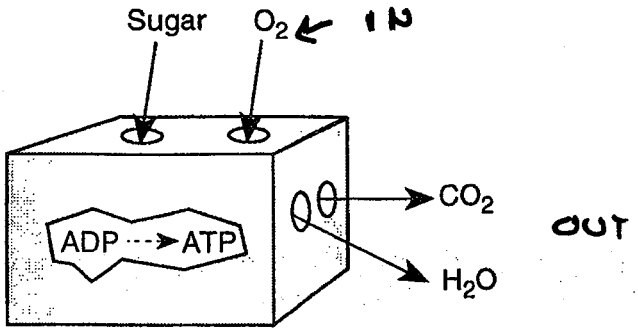
8. Which set of terms best identifies the letters in the diagram below?



	A	B	C
(1)	photosynthesis	inorganic molecules	decomposition
(2)	respiration	organic molecules	digestion
(3)	photosynthesis	organic molecules	respiration
(4)	respiration	inorganic molecules	photosynthesis

A) 1
B) 2
(C) 3
D) 4

9. The diagram below represents some events that take place in a plant cell. → TO FOOL YOU



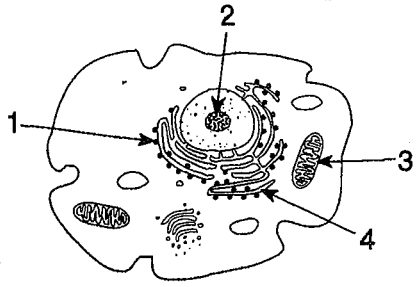
In which organelle would these events most likely occur?

(A) mitochondrion
B) chloroplast
C) lysosome
D) centriole

SUGAR + O_2 → CO_2 + H_2O
WHAT PROCESS
WHERE

GOOD INFO FOR ORGANIC

10. In the diagram of a cell shown below, which number indicates the structure in which most of the enzymes involved in aerobic cellular respiration function?



A) 1 B) 2 C) 3 D) 4

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
- identify the organelle where this process occurs
- identify *two* raw materials necessary for this process
- identify *one* energy-rich molecule that is produced by this process
- state how organisms use the energy-rich molecule that is produced
- state how a gas produced by this process is recycled in nature

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PHOTO

- USE SUN ENERGY TO CONVERT $H_2O + CO_2$ TO GLUCOSE + O_2 CHEMICAL PROCESS
- CHLOROPLAST
- $CO_2 + H_2O$
- GLUCOSE
- ENERGY STORAGE, USED FOR PLANT GROWTH

RESP

A CHEMICAL PROCESS IN WHICH GLUCOSE + O_2 ARE COMBINED TO PRODUCE ATP

- MITOCHONDRIA
- $C_6H_{12}O_6 + O_2$
- ATP
- LIFE FUNCTIONS, GROWTH & REPAIR

P $CO_2 + H_2O \longrightarrow C_6H_{12}O_6 + O_2$

R $O_2 + C_6H_{12}O_6 \longrightarrow CO_2 + H_2O + ATP$