

**Concepts of Biology  
Practice Test  
Respiration**

Respiration starts with a process called 1 in which food is broken down into two pyruvates. This process occurs in the 2 (part of the cell) and results in a net gain of 3 ATP.

Under anaerobic conditions, yeast and most bacteria will do alcoholic fermentation. The end products of this process are 4 and 5. Animal muscle cells deprived of oxygen will do lactic acid fermentation. The end product of lactic acid fermentation is 6.

Unlike prokaryotes, eukaryotes have membrane bound organelles. The organelle responsible for aerobic respiration is the 7. Once the pyruvate moves into the matrix of the mitochondria it is converted to 8 which combines with oxaloacetate to form the 6C compound 9. This 6C compound is then broken down to release 10, 11 and 12. The former diffuses out of the body and the latter two are then used for the next two vital processes of forming ATP. The electrons are passed from NAD to FAD to CoQ to cytochromes and the 13 which is the final electron acceptor in the process called 14 15. Meanwhile the 16 are stored in the outer compartment of the mitochondria until the ATP synthase ( $CF_0$ - $CF_1$ ) gates open and they 17 (a. passively diffuse, b. are pumped) into the matrix forming ATP. The process of storing the  $H^+$ , their moving across the inner mitochondrial membrane and forming ATP is called 18. The purpose of cellular respiration is to make 19.

Write the formula for respiration and balance \_\_\_\_\_ 20 \_\_\_\_\_.

The reverse of this process is \_\_\_\_\_ 21 \_\_\_\_\_.

**Concepts of Biology  
Practice Test  
Photosynthesis**

Write the formula for photosynthesis and balance it: \_\_\_\_\_ 1 and 2 \_\_\_\_\_.

What is the reverse of this process? \_\_\_\_\_ 3 \_\_\_\_\_.

Photosynthesis is the process by which green plants make \_\_\_\_\_ 4 \_\_\_\_\_. They use \_\_\_\_\_ 5 \_\_\_\_\_ to start this process. The wave lengths of light primarily used to run photosynthesis are \_\_\_\_\_ 6 \_\_\_\_\_ and \_\_\_\_\_ 7 \_\_\_\_\_. When the light hits the plant, H<sub>2</sub>O is split into \_\_\_\_\_ 8 \_\_\_\_\_, \_\_\_\_\_ 9 \_\_\_\_\_, and \_\_\_\_\_ 10 \_\_\_\_\_. The \_\_\_\_\_ 11 \_\_\_\_\_ diffuses out of the plant and is then inhaled by plants and animals in aerobic respiration. The process of splitting H<sub>2</sub>O is known as \_\_\_\_\_ 12 \_\_\_\_\_. All of this occurs in the \_\_\_\_\_ 13 \_\_\_\_\_ (specific part of the plant). The \_\_\_\_\_ 14 \_\_\_\_\_ are passed to NADP<sup>+</sup> while the \_\_\_\_\_ 15 \_\_\_\_\_ are stored in the matrix of the thalykoid. At some point the H<sup>+</sup> diffuse through the ATP synthase gates forming ATP. This is used to provide energy to the next part of the photosynthesis in which the CO<sub>2</sub> is used. This process is called \_\_\_\_\_ 16 \_\_\_\_\_. During this process the CO<sub>2</sub> will combine with \_\_\_\_\_ 17 \_\_\_\_\_ to form PGAL. The PGAL's can then be used to make \_\_\_\_\_ 18 \_\_\_\_\_.

Why are green plants green? \_\_\_\_\_ 20 \_\_\_\_\_.