

Study Guide for: Energy and Chemistry of Life Part II (united streaming)

Name _____

- 1.) Chemical bonds store _____.
- 2.) When these chemical bonds are broken, energy is _____.
- 3.) In some reactions there is an energy surplus (extra energy), this type of reaction is called an _____ reaction.
- 4.) What is the "energy currency" of life? _____
- 5.) ATP is made of the molecule adenosine plus three _____ groups.
- 6.) Which bond of ATP is the high energy bond? _____
- 7.) What molecule is created when the third phosphate is removed from ATP? _____
- 8.) Photosynthesis uses carbon dioxide and water to create _____.
- 9.) Gases get in and out of leaves through tiny holes called _____
- 10.) What 3 organisms can undergo photosynthesis?
 - a. _____
 - b. _____
 - c. _____
- 11.) Photosynthesis occurs in these organelles _____
- 12.) Chloroplasts have an outer _____ & an inner _____.
- 13.) These membranes enclose the _____.
- 14.) Thyalkoid membranes are concentrated in stacks called _____.
- 15.) What makes the grana green? _____ This is what actually captures energy from sunlight.
- 16.) A photon of light from the sun hits a molecule of chlorophyll in the grana. This excites an electron which gives off enough energy to add a _____ onto _____ to make _____! This happens during the _____ reaction of photosynthesis. Also, _____ is broken down and _____ is released.
- 17.) The dark reactions of photosynthesis do not require _____. These reactions occur in the fluid filled area of the chloroplast called the _____.
- 18.) ATP created in the light reactions causes carbons, oxygens, and hydrogens to be bonded together to form this awesome molecule? _____ (and that's what it's all about!)

19.) We owe our lives to photosynthesis because it creates nearly all the _____ on this planet...a lot comes from those little algae.

20.) The first stage of cellular respiration happens here?

21.) During glycolysis, this molecule is broken down _____ (gee, we just made it!)

22.) _____ acid is created when glucose is broken down.

23.) In what organelle is most of the cells ATP produced?

24.) After glycolysis comes this step, the _____ cycle. _____ ATP are created. Unlike glycolysis, this step actually happens in the _____.

25.) Carbon dioxide is a byproduct of the above process. In humans, where does the carbon dioxide go?

Where does it go in plants?

26.) How many ATP are created during the electron transport chain?

27.) How many NET ATP are created as a result of aerobic cellular respiration? _____

28.) What organisms undergo cellular respiration?

29.) Why do we and most other organisms need oxygen? (the answer is not breathing!) _____

30.) Yeast and some bacteria can undergo _____ cellular respiration, meaning they do not need oxygen.

QUIZ

1. ATP is used by cells of all living things as a source of readily-available _____.
2. ATP levels in cells are renewed from ADP and inorganic phosphate through the important metabolic process called _____.
3. In most cases, the sugar called _____ is critical to the ATP renewal process.
4. In photosynthesis, carbon dioxide and _____ are combined in the presence of sunlight and chlorophyll.
5. True or False: Most chlorophyll is found in the green-colored organelles called mitochondria.