

Cell Energy Review

Photosynthesis

1. What organelle and organism does photosynthesis?
2. What is the equation for photosynthesis?
3. Where does each part of photosynthesis take place? (Specific part of organelle)
4. Where is the light attracted to in the thylakoid?
5. What causes the electron to get excited? What comes into the thylakoid disks when the excited electron gets passed from protein to protein?
6. What is the electron used for at the end of the protein chain?
7. Why does the water split in the light reaction? Where did the water come from? Where do O₂ and H⁺ go?
8. What enzyme is used to make ATP? Explain how the ATP is formed: the reaction and what powers the reaction
9. What are the 2 products of the light reaction that is then used up in the Calvin cycle?
10. What combines with the RuBP (a 5 carbon molecule) at the start of the Calvin cycle (came in from the atmosphere)?
11. What is the name of the enzyme used to bind the answer from #10 with the RuBP?
12. What is the main product at the end of the Calvin cycle? What happens to the remaining sugars?
13. What are 3 things that can affect the rate of photosynthesis?

Cell Respiration

1. What organelle and organism does cell respiration?
2. What is the equation for cell respiration?
3. What are the 2 types of fermentation and what molecule is NOT present in order to do fermentation?
4. How is the amount of energy produced in fermentation (anaerobic respiration) different from cellular (aerobic) respiration?
5. Where does each part of cell respiration take place in the cell?
6. How much ATP is produced in each of the 3 steps of cell respiration?
7. When glucose breaks down in Glycolysis, what 2 molecules are released?
8. What is the purpose of the carrier molecules NADH and FADH₂?
9. What 2 molecules get released at the start of the Krebs cycle when the 3-carbon molecule gets broken down into acetyl CoA?
10. What is the purpose of acetyl CoA?
11. What products are made in the Krebs cycle?
12. Explain what happens to the carrier molecules in the electron transport chain? What moves through the protein chain when the electrons flow through?
13. What is the final electron acceptor molecule in the electron transport chain? What molecule is made when it binds to hydrogen?
14. What is the name of the enzyme that makes the ATP in the electron transport chain?