Chapter 8: Cellular Energy Outline Quiz #3a

*Section 3:* Cellular Respiration

1. During cellular respiration living organisms obtain \_\_\_a\_\_ by breaking down \_\_b\_\_\_.
2. \_\_\_\_\_ are harvested from organic compounds and used to make ATP.
3. Write the equation for cellular respiration.
4. Processes that do not require oxygen are referred to as \_\_a\_\_\_ and those that do require oxygen are \_\_\_b\_\_.
5. The first stage of cellular respiration is \_\_a\_\_\_ which is an \_\_b\_\_\_ process.
6. The aerobic processes in cellular respiration include \_\_a\_\_\_ and \_\_b\_\_\_.
7. Glycolysis occurs in the \_\_\_a\_\_ whereas the formation of acetyl CoA and the Kreb’s cycle occurs in the \_\_\_b\_\_.
8. \_\_a\_\_\_ molecules of ATP are produced during glycolysis but \_\_b\_\_\_ molecules are used to start the reaction, therefore the net gain is \_\_c\_\_\_ ATP.
9. \_\_a\_\_\_ molecules of NADH are produced from the breakdown of \_\_b\_\_\_ during glycolysis.
10. During glycolysis, glucose is first split into 2 molecules of \_\_a\_\_\_ with the energy supplied from \_\_\_b\_\_ ATP as well as the addition of phosphates.
11. At the end of glycolysis, 2 molecules of \_\_\_\_\_ are produced which are sent to the next stage of cellular respiration.
12. During the formation of Acetyl CoA, \_\_\_a\_\_ is converted to a compound called \_\_\_b\_\_.
13. Each \_\_\_\_\_ releases a molecule of carbon dioxide during the formation of Acetyl CoA.
14. In converting pyruvate to \_\_a\_\_\_, electrons and \_\_\_b\_\_ ions are removed by a molecule of NAD+ forming \_\_\_c\_\_.
15. Acetate is converted to Acetyl CoA with the enzyme \_\_\_\_\_.
16. During the \_\_a\_\_\_, each acetyl CoA is converted to \_\_b\_\_\_.
17. From the 2 molecules of acetyl CoA, 4 molecules of \_\_\_a\_\_, \_\_\_b\_\_ molecules of NADH, and \_\_c\_\_\_ molecules of FADH2 are formed.
18. Citric acid is formed when \_\_\_a\_\_ combines with \_\_b\_\_\_ during the Kreb’s cycle.
19. Citric Acid is broken in a series of steps releasing \_\_a\_\_\_ molecules of carbon dioxide and generates 1 \_\_b\_\_\_, 3 \_\_\_c\_\_, and 1 \_\_\_d\_\_ per Acetyl CoA.
20. The Kreb’s cycle occurs \_\_a\_\_\_ times because 2 molecules of acetyl CoA are created from one molecule of \_\_b\_\_\_.

***Fill in the total # of net produced/released for each stage of cellular respiration.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Stage** | **ATP** | **NADH** | **FADH2** | **CO2** |
| **Glycolysis** |  |  |  |  |
| **Formation of Acetyl CoA** |  |  |  |  |
| **Kreb’s Cycle** |  |  |  |  |