**Biology 11 – Cellular Respiration
Section 9-1 and 9-2 *(pp.200-222, 232)***

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE: June 4, 2019 DUE: FRIDAY, JUNE 7/19**

1. **Fill in the Blanks –** Identify the best answers to complete the statements below. **VALUE 30**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a process that is NOT a stage of cellular respiration.

2. The reactants in the equation for cellular respiration are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. The starting molecule for glycolysis is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. One cause of muscle soreness is due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. The conversion of pyruvic acid into lactic acid requires \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ passes high-energy electrons into the electron transport chain.

7. Cellular respiration uses one molecule of glucose to produce\_\_\_\_\_\_ (number) \_\_\_\_\_\_\_\_\_\_\_\_\_molecules.

8. Breathing heavily after running a race is your body’s way of repaying an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ debt.

9. Three sources of energy during exercise include stored \_\_\_\_\_\_\_\_\_\_\_\_ in muscles, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(2 words) fermentation, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ respiration.

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a process that does NOT release energy from glucose.

11. Photosynthesis is to chloroplasts as cellular respiration is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

12. Plants cannot release energy from glucose using the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

13. Cellular respiration occurs only in the presence of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

14. Without oxygen, a cell can extract a net gain of only \_\_\_\_\_\_ molecules of ATP from each glucose molecule.

15. The Krebs cycle and the electron transport take place inside the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

16. The equation for cellular respiration is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

17. Glycolysis is the process in which one molecule of glucose is broken in half, producing \_\_\_\_\_\_\_\_ molecules of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, a 3-carbon compound.

18. At the end of glycolysis, \_\_\_\_\_\_\_\_\_\_% of the chemical energy in glucose is still unused.

19. Pyruvic acid during the Krebs cycle is broken down into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a series of energy-extracting reactions.

20. The Krebs cycle is also known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cycle.

1. **FALSE STATEMENTS–** All of the following statements are FALSE. Indicate the incorrect word or words (**underline** or circle the incorrect word/words) and replace with the correct word(s) to make the statement TRUE in the spaces provided. **Value 15**
2. ATP is used by organisms to manufacture new cells and to repair or replace worn-out parts.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A Calorie is the amount of energy needed to raise the temperature of 1 gram of water 1 degree Celsius.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Both plants and animals carry out the final stages of cellular respiration in the cytoplasm.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. One gramof sugar molecule, when burned in the presence of oxygen, releasing 1000 calories of heat energy.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The release of energy from glucose begins with the process called Krebs cycle.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Photosynthesis is the process that releases energy.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The Krebs cycle begins when citric acid produced by glycolysis inters the mitochondrion.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Cellular respiration is a process which deposits energy.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. NADP+ is an electron carrier of glycolysis.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Glycolysis produces 2 ATP’s whereas the Krebs cycle produces 34 ATP’s.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Carbon dioxide produced during the breaking down of pyruvic acid is not released into the air.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The waste products of cellular respiration are glucose and oxygen.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Glycolysis releases large amount of energy.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Every time one exhales, one expels the carbon dioxide produced by the electron transport chain.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Exercise increases the production of oxygen in an organism.

ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **ANSWER ANY TWO of the following ON YOUR OWN PAPER. Value 10**
2. Indicate the similarities and differences between alcoholic and lactic acid fermentation.
3. (a) What are three advantages of the process of glycolysis?
4. What three sources of ATP does your body use during a long aerobic exercise session?
5. What would be a problem if cellular respiration took place in just one step?
6. Describe the formation of citric acid.
7. What is the electron transport chain?
8. **LONG ANSWER – ANSWER THE FOLLOWING ON YOUR OWN PAPER - Value 10**
9. Compare and contrast (similarities/differences), *in full detail*, the electron transport chain in the chloroplast to the electron transport chain in the mitochondrion. Diagrams optional.

**TOTALVALUE 65**

**READ ALL QUESTIONS AND RESPONSES PRIOR TO HANDING IN**

**GOOD LUCK WITH EXAMS! HAVE A GREAT SUMMER!**