



**BIOLOGY**  
**REVISION SHEET**  
**Final Exam**  
**TERM-II**  
**GRADE 9**  
**Session: 2018-19**

**Note: The students should first study from their textbook and then try to solve this revision sheet independently**

**Materials included in the exam:**

**CHAPTER 4**

**Sections: 2, 3, 4 and 5**

**Textbook Pages: 101 -119**

**Student Name: .....**

**MAIN IDEA: CELLULAR RESPIRATION MAKES ATP BY BREAKING DOWN SUGARS..**

**Q.1: Circle the word or phrase that best completes the statement.**

1. Cellular respiration is a process that releases glucose / energy from sugars and other carbon-based molecules to make ATP when oxygen / carbon dioxide is present.
2. Cellular respiration is called an aerobic process, because it needs oxygen / carbon dioxide to take place.
3. Cellular respiration takes place in the chloroplasts / mitochondria.
4. During glycolysis, one molecule of glucose / protein is split into two three-carbon molecules and two ADP / ATP are formed.

**Q.2: Answer the following questions.**

1. The overall process of cellular respiration can be written as a chemical equation. Fill in the blanks in the equation below using the appropriate compound from the box.



2. The two reactants in the cellular respiration equation are \_\_\_\_\_ and \_\_\_\_\_.
3. The two products in the cellular respiration equation are \_\_\_\_\_ and \_\_\_\_\_.
4. Glycolysis is an anaerobic process, because it takes place without \_\_\_\_\_.
5. During the Krebs cycle, chemical reactions \_\_\_\_\_ carbon-based molecules.

**MAIN IDEA: Glycolysis is needed for cellular respiration.**

**Q.3: Choose the letter of the best answer.**

**1. What is the main function of the Krebs cycle?**

- a. breaking down pyruvate molecules to form molecules of NADH and oxygen
- b. forming citric acid to make NADH, water, and CO<sub>2</sub>
- c. producing molecules that carry high-energy electrons to the electron transport chain
- d. bonding coenzyme A to pyruvate

**2. In the electron transport chain, energy from the Krebs cycle is used to pump hydrogen ions**

- a. across the inner mitochondrial membrane.
- b. through the ATP synthase enzyme in the mitochondrial matrix.
- c. along a concentration gradient in the thylakoid.
- d. along the thylakoid membrane.

**3. What is the function of oxygen in cellular respiration?**

- a. to deliver hydrogen ions to the electron transport chain
- b. to pick up electrons at the end of the electron transport chain
- c. to provide oxygen for the production of carbon dioxide
- d. to give a source of energy to the Krebs cycle

**4. An electron transport chain is part of**

- a. the Krebs cycle only.
- b. cellular respiration only.
- c. both photosynthesis and cellular respiration.
- d. both glycolysis and the Krebs cycle

**Q.4: FILL IN THE BLANK WITH THE WORD OR PHRASE THAT BEST COMPLETES THE SENTENCE**

1. The function of glycolysis is to split \_\_\_\_\_ and produce energy-carrying molecules.
2. Three molecules are formed during glycolysis when oxygen is available. \_\_\_\_\_ and \_\_\_\_\_ are used in cellular respiration. \_\_\_\_\_ can be used for cell processes.
3. Glycolysis results in a “net gain of two ATP molecules.” This means that \_\_\_\_\_ ATP are used to split glucose and \_\_\_\_\_ ATP are produced. Therefore, in the end, there are two additional ATP.

**Q.5: ANSWER THE FOLLOWING QUESTIONS IN THE SPACE PROVIDED.**

1. What do all cells use for energy?
  
  
  
  
  
  
  
  
  
  
2. What is ATP?
  
  
  
  
  
  
  
  
  
  
3. What is the relationship between ATP and ADP?

4. What is chemosynthesis?
5. What is the function of photosynthesis?
6. What is chlorophyll?
7. In which two parts of a chloroplast does photosynthesis take place?
8. Write the chemical equation for the overall process of photosynthesis
9. What are the differences between the light-dependent reactions and the light-independent reactions?
10. What are photosystems?
11. Which molecules carry energy to the light-independent reactions?
12. What is the function of the Calvin cycle?
13. In what two ways does cellular respiration seem to be the opposite of photosynthesis?

14. In which two parts of a mitochondrion does cellular respiration take place?

15. What does it mean to say that glycolysis is an anaerobic process?

16. What is the Krebs cycle?

17. What happens to the molecules formed during glycolysis when oxygen is available?

18. What is meant by a “net gain of two ATP molecules” from Glycolysis?

19. Where is the electron transport chain in cellular respiration located?

20. What is the function of the electron transport chain?

21. Why is oxygen needed for cellular respiration?