

CHAPTER 4 CELLS AND ENERGY

VOCABULARY PRACTICE ANSWER

KEY

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How are cellular respiration and photosynthesis related in terms of energy?

Photosynthesis makes glucose which is used in cellular respiration for making ATP. The glucose is then transformed back into carbon dioxide, which is used in photosynthesis. It helps cells to release and store energy. It maintains the atmospheric balance of carbon dioxide and oxygen.

In what process do our cells break apart these molecules in order to get energy in what form is that energy in? During glycolysis, a glucose molecule with six carbon atoms is converted into two molecules of pyruvate, each of which contains three carbon atoms. For each molecule of glucose, two molecules of ATP are hydrolyzed to provide energy to drive the early steps, but four molecules of ATP are produced in the later steps.

How do cells obtain more energy and what is the name of this process? cellular respiration, the process by which organisms combine oxygen with foodstuff molecules, diverting the chemical energy in these substances into life-sustaining activities and discarding, as waste products, carbon dioxide and water.

What is the primary energy currency in cells in other words cells need energy in what form to be able to do work? ATP is commonly referred to as the "energy currency" of the cell, as it provides readily releasable energy in the bond between the second and third phosphate groups.

What are the key molecules and organelles of photosynthesis and cellular respiration? Photosynthesis takes six carbon dioxide molecules, six water molecules, and sunlight and creates glucose ($C_6H_{12}O_6$). Cellular respiration takes glucose ($C_6H_{12}O_6$), six water molecules, and six oxygen molecules and creates six carbon dioxide molecules, 6 water molecules, and energy in the form of ATP.

How would you summarize the relationship between photosynthesis and cellular respiration? Both are processes within the cell which make chemical energy available for life. Photosynthesis transforms light energy into chemical energy stored in glucose, and cellular respiration releases the energy from glucose to build ATP, which does the work of life.

What is the simple explanation of cellular respiration? Cellular respiration is a series of chemical reactions that break down glucose to produce ATP, which may be used as energy to power many reactions throughout the body. There are three main steps of cellular respiration: glycolysis, the citric acid cycle, and oxidative phosphorylation.

What is the process of respiration? The lungs and respiratory system allow us to breathe. They bring oxygen into our bodies (called inspiration, or inhalation) and send carbon dioxide out (called expiration, or exhalation). This exchange of oxygen and carbon dioxide is called respiration.

What is the link step in cellular respiration? The link reaction refers to a stage in cellular respiration that “links” two other stages. The link reaction takes the products of the first stage, glycolysis, and converts them into reactants that will enter the Krebs cycle. The primary product of glycolysis is the 3-carbon compound pyruvate.

What happens to the oxygen that is used in cellular respiration? The oxygen used during cellular respiration is converted to water during oxidative phosphorylation of the electron transport chain.

What is the primary role of oxygen in cellular respiration? The role of oxygen in cellular respiration is to act as the end electron acceptor. After electrons are dropped off at the inner mitochondrial membrane during cellular respiration, they travel through the electron transport chain and eventually are accepted by oxygen to create

water.

What is the biological importance of cellular respiration? The purpose of cellular respiration is simple: it provides cells with the energy they need to function. If living things could not get the energy they need out of food, it would be absolutely worthless. All living things would eventually die, no matter the quality and amount of food.

What is ATP for dummies? adenosine triphosphate (ATP), energy-carrying molecule found in the cells of all living things. ATP captures chemical energy obtained from the breakdown of food molecules and releases it to fuel other cellular processes.

What are the products of cellular respiration? The products of cellular respiration are energy (or ATP), carbon dioxide, and water. The products of respiration or breathing, come from the reactions of cellular respiration. In animals, carbon dioxide is transported back to the lungs through the blood and exhaled through exhalation.

What are three examples of how ATP is used in the cell? The ATP is used up for carrying out various cellular functions, including transportation of different molecules across the cell membranes. It also includes supplying the energy required for muscle contraction, circulation of blood, locomotion, and various other body movements.

What is the output of light-dependent reactions? For light-dependent reactions The overall inputs of the light-dependent are water, light, inorganic phosphate (Pi), Nicotinamide adenine dinucleotide phosphate (NADP), and adenosine diphosphate (ADP). The output of the reaction are NADPH (NADP hydrogen), adenosine triphosphate (ATP), and oxygen.

What organelle makes lipids? The main lipid biosynthetic organelle is the endoplasmic reticulum (ER)¹⁶, which produces the bulk of the structural phospholipids and cholesterol (ergosterol in yeast) (FIG. 2), as well as significant levels of triacylglycerol and cholesteryl esters that have non-structural roles.

Which produces more energy, aerobic respiration or fermentation? Aerobic respiration produces more usable chemical energy in the form of ATPs than fermentation because aerobic respiration involves the complete oxidation of glucose

and the release of carbon dioxide and water as end products.

What are the key organelles in photosynthesis and cellular respiration?

Chloroplasts and mitochondria are the organelles involved in photosynthesis and cell respiration respectively.

Where do photosynthesis and cellular respiration occur inside the cell?

Photosynthesis occurs in the chloroplasts, whereas cellular respiration occurs in the mitochondria. Photosynthesis makes glucose and oxygen, which are then used as the starting products for cellular respiration.

What is found in both photosynthesis and cellular respiration? Expert-Verified

Answer The process found in both cellular respiration and photosynthesis is Electron transport chain.

How do cellular respiration and photosynthesis compare in terms of the flow of energy?

The change of energy in photosynthesis occurs between sunlight and glucose while in cellular respiration the change of energy moves from glucose to oxygen. Photosynthesis takes place in the chloroplast while cellular respiration happens in the mitochondria.

How are cellular respiration and photosynthesis related in terms of energy quizlet?

The energy captured in photosynthesis is used to power cellular respiration. Energy from the sun is used captured during photosynthesis and stored in the bonds of glucose molecules. During cellular respiration, this energy transferred to ATP molecules to be used to do work in the cell.

Why is photosynthesis and cellular respiration considered to be an energy cycle?

Answer: Cellular respiration and photosynthesis are considered a cycle because the product (end material) of one reaction serves as the starting material for the other reaction. The starting material for cellular respiration is sugar and water and the products are carbon dioxide and water.

How are cellular respiration and photosynthesis related in terms of energy brainly?

Photosynthesis produces glucose molecules, which store chemical energy in their bonds. These bonds are broken down via the process of cellular respiration to release the stored energy.

What is the Apache Hive used for? Apache Hive is a distributed, fault-tolerant data warehouse system that enables analytics at a massive scale. A data warehouse provides a central store of information that can easily be analyzed to make informed, data driven decisions. Hive allows users to read, write, and manage petabytes of data using SQL.

Is the Apache Hive a programming language? Apache Hive is a data warehouse software project. It is built on top of Apache Hadoop for providing data query and analysis. Hive gives an SQL-like interface to query data stored in various databases and file systems that integrate with Hadoop.

Is Apache Hive open source? Apache Hive is open-source data warehouse software designed to read, write, and manage large datasets extracted from the Apache Hadoop Distributed File System (HDFS) , one aspect of a larger Hadoop Ecosystem.

Is Apache Hive easy to learn? Apache Hive vs. Apache Hive and Apache Pig are key components of the Hadoop ecosystem, and are sometimes confused because they serve similar purposes. However, Apache Hive leverages SQL more directly and thus, is easier for database experts to learn.

Is Apache Hive outdated? While Hive as a query engine is mostly dead today, having been replaced by several other more advanced technologies, the key concepts it brought with it are very much still with us today.

Where can I learn Hive?

Is Hive a database or not? It's important to note Hive is not a relational database, a type of database that organizes data into tables based on related points. Rather, Hive organizes data into similar tables based on unit size. These tables are made of separate partitions to divide tables into different parts based on data information.

Who uses Apache Hive?

How do I start Apache Hive?

How much does Hive database cost?

How to connect to Apache Hive?

What is the purpose of a Hive? The Hive is Home Different types of bees use different methods to build hives, depending on their habitat and social structure. Regardless of the type of hive that is built, however, they all serve the same purpose: They exist as the bees' home and to protect the queen bee and larvae.

Who uses Apache Hive?

What is Hive good for? Control your smart home heating wherever you are with the Hive app. Boost the temperature, set schedules and get instant alerts if you've gone out and left the heating on. It'll even protect against costly frozen pipes in winter – and continue to save energy while you're on holiday too.

What is Hive software used for? Hive is a cloud-based project management software that any size of business can use to manage teams, collaborate, plan projects, assign tasks, and automate workflow processes. Our reviewers evaluate software independently.

What is the story of don't stop the carnival? Don't Stop the Carnival revolves around the lead character of Norman Paperman. He is the middle-aged New York City press agent who leaves the noise and safety of the big city and runs away to a (fictional) Caribbean island to redeem and reinvent himself as a hotel keeper.

What was Herman Wouk's last book? Wouk's memoir, titled *Sailor and Fiddler: Reflections of a 100-Year-Old Author*, was published in January 2016 to mark his 100th birthday. NPR called it "a lovely coda to the career of a man who made American literature a kinder, smarter, better place." It was his last book.

What's the story behind Carnival? It possibly has its roots in a primitive festival honouring the beginning of the new year and the rebirth of nature, though it is also possible that the beginnings of Carnival in Italy may be linked to the pagan Saturnalian festival of ancient Rome.

What is the message of Carnival? Today, Carnival is an act of celebration for freedom throughout the entire Caribbean and the Caribbean diaspora across the world where people celebrate their culture and remember all the pain that their

ancestors endured.

Was Herman Wouk in the military? Immediately after Pearl Harbor, Wouk enlisted in the Navy, entered midshipman's school and was posted as a radio officer to the U.S.S. Zane. While on board he read Don Quixote, which turned his ambitions from the stage to novel writing. He sent four chapters of Aurora Dawn to Edman, who placed it with Simon & Schuster.

Where did Herman Wouk live? 1952 Fiction winner Herman Wouk died in his sleep, his family and literary agent announced Friday. He was 103 and had resided in Palm Springs, Calif. since 1990, following long residencies in Washington, D.C. and the U.S. Virgin Islands.

What is the book The Last Tycoon about? It is the story of the young Hollywood mogul Monroe Stahr, who was inspired by the life of boy-genius Irving Thalberg, and is an exposé of the studio system in its heyday. The Last Tycoon is now available for the first time in paperback.

The Obstacle Is the Way: The Timeless Art of Turning Trials into Triumph

In the face of adversity, it's easy to feel discouraged and overwhelmed. However, the ancient philosopher Marcus Aurelius taught that obstacles are not something to be avoided but rather embraced as opportunities for growth and transformation.

What does "The Obstacle Is the Way" mean?

The phrase "The Obstacle Is the Way" encapsulates the belief that obstacles are not barriers but rather stepping stones on our path to success. By confronting challenges head-on, we can develop the strength, resilience, and wisdom necessary to overcome them.

How can we turn trials into triumphs?

Turning trials into triumphs requires a shift in perspective. Instead of seeing obstacles as problems, we must view them as opportunities for personal development. By embracing challenges and learning from our mistakes, we can emerge from adversity stronger than ever before.

What are the benefits of overcoming obstacles?

Overcoming obstacles brings numerous benefits, including:

- Increased self-confidence
- Enhanced problem-solving skills
- Greater resilience
- Improved adaptability
- A deeper sense of purpose and fulfillment

How can we apply "The Obstacle Is the Way" in our lives?

To apply "The Obstacle Is the Way" in our lives, we must:

- Embrace challenges as opportunities for growth
- Learn from our mistakes
- Focus on our goals rather than our obstacles
- Surround ourselves with supportive people
- Remember that adversity is a temporary state

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