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| --- |
| 1. Which of the following statements is FALSE?
 |
| 1. Krebs cycle is also called citric acid cycle
 |
| 1. Krebs cycle occurs in the cytoplasm
 |
| 1. Krebs cycle breaks down pyruvate
2. Krebs cycle supplies the third of cellular respiration with electrons
 |
| 1. The energy currency of the cell is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
 |
| 1. Glucose
 |
| 1. ATP
 |
| 1. Protein
 |
| 1. Lipid
 |
| 1. Glycolysis begins respiration by breaking \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
 |
| 1. ATP
 |
| 1. Pyruvate
 |
| 1. Glucose
 |
| 1. Protein
 |
| 1. Cellular respiration can produce up to \_\_\_\_\_\_\_ATP molecules for each glucose molecule.
 |
| 1. 23
 |
| 1. 43
 |
| 1. 32
 |
| 1. 44
 |
| 1. Cramps during exercise are caused by:
 |
| 1. Alcohol fermentation
 |
| 1. Lactic acid fermentation
 |
| 1. Krebs cycle
 |
| 1. Glycolysis
 |
| 1. The average adult human needs to take in food that provides about \_\_\_\_\_\_\_\_\_\_\_\_\_ per day.
 |
| 1. 2200 kj
 |
| 1. 2200 km
 |
| 1. 2200 kcal
 |
| 1. 2200 kg
 |
| 1. Which of the following is necessary for oxidative phosporylation to occur?
 |
| 1. ATP
 |
| 1. Oxygen
 |
| 1. Carbon dioxide
 |
| 1. Water
 |
| 1. During cellular respiration, glycolysis occurs in:
 |
| 1. Cytoplasm
 |
| 1. Thylakoids
 |
| 1. Chloroplast
 |
| 1. Mitochondrion
 |
| 1. Fats make excellent cellular fuel because they
 |
| 1. Contain many hydrogen atoms
 |
| 1. yield more than twice as much ATP per gram than a gram of carbohydrate
 |
| 1. Yield more ATP per gram than a gram of protein.
 |
| 1. All of the above
 |
| 1. Which of the following are the products of the Krebs cycle?
 |
| 1. ATP
 |
| 1. NADH
 |
| 1. FADH2
 |
| 1. All of them
 |
| 1. Most ATP in eukaryotic cells is produced in the:
 |
| 1. Mitochondria
 |
| 1. Nucleus
 |
| 1. Cytoplasm
 |
| 1. Chloroplast
 |
| 1. Single-celled microorganisms that not only can use respiration for energy but can ferment under anaerobic conditions are called :
 |
| 1. Yeasts
 |
| 1. Molds
 |
| 1. Bacteria
 |
| 1. Protists
 |
| 1. The final electron acceptor in aerobic respiration is:
 |
| 1. CO2
 |
| 1. O2
 |
| 1. NAD+
 |
| 1. ATP
 |
| 1. Which of the following processes produces the most ATP?
 |
| 1. Glycolysis
 |
| 1. Oxidative phosphorylation
 |
| 1. Fermentation
 |
| 1. Krebs cycle
 |
| 1. ATP can be generated from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
 |
| 1. Lipids
 |
| 1. Carbohydrates
 |
| 1. Proteins
 |
| 1. All of them
2. Which of the following is a product of oxidative phosphorylation?
	* 1. Pyruvate
		2. Water
		3. Oxygen
		4. Carbon dioxide
3. glycolysis begins respiration by breaking
4. ATP
5. Pyruvate
6. Glucose
7. Protein
8. Which of the following statements is FALSE?
	* 1. Krebs cycle is also called citric acid cycle
		2. Krebs cycle produces 2 ATP
		3. Krebs cycle occurs in the cytoplasm
		4. Krebs cycle supplies the third of cellular respiration with electrons
9. The fuel usually used in cellular respiration is
	* + 1. Fructose
			2. Glucose
			3. Chitin
			4. Galactos
10. The process of cellular respiration involves \_\_\_\_\_\_\_\_\_\_reactions
	* 1. Hydrolysis and Oxidation
		2. Oxidation and Dehydration
		3. Reduction and Hydrolysis
		4. Reduction and Oxidation
11. What is the role of oxygen in cellular respiration?
	* 1. It is reduced in glycolysis
		2. It is final acceptor of electrons
		3. It combines with CO2
		4. It is required for the production of heat and light
12. Which of the following occurs outside the mitochondria?
	* 1. Krebs cycle
		2. Glycolysis
		3. Electron transport chain
		4. All answers are correct
13. Which one of the following is true?
	* 1. Cellular respiration occurs in mitochondria and in chloroplasts.
		2. Cellular respiration occurs in mitochondria
		3. Photosynthesis occurs in mitochondria
		4. Photosynthesis occurs in mitochondria and in chloroplasts
14. Anaerobic respiration\_\_\_\_\_ and aerobic respiration \_\_\_\_\_\_.
	* 1. uses oxygen \_\_\_\_\_\_\_\_\_\_\_\_\_\_ produces glucose
		2. uses water \_\_\_\_\_\_\_\_\_\_\_ produces oxygen
		3. Do not use oxygen\_\_\_\_\_\_\_uses oxygen
		4. uses carbon dioxide \_\_\_\_\_\_\_\_\_\_ produces oxygen

 1. Lactic acid fermentation is a form of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	* 1. Photosynthesis
		2. Aerobic respiration
		3. Anaerobic respiration
		4. None of the above

 Cellular respiration can produce up to \_\_\_\_\_\_\_ ATP molecules for each glucose molecule.* + 1. 23
		2. 13
		3. 32
		4. 30
1. The role of cellular respiration is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	* 1. Forming glucose from carbon dioxide and water
		2. Breaking down glucose to make ATP
		3. Forming water from glucose
		4. Consuming ATP to form oxygen
2. ATP can be generated from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	* + 1. Lipids
			2. Carbohydrates
			3. Proteins
			4. All of them
3. The final electron acceptor in aerobic respiration is:
	* + 1. ATP
			2. NADH
			3. FADH
			4. Oxygen
4. Which of the following is necessary for oxidative phosphorylation to occur?
	* + 1. ATP
			2. Carbon dioxide
			3. Water
			4. Oxygen
 |

1. Cellular respiration serves to \_\_\_\_\_.
	1. make ATP to power the cell's activities
	2. make food
	3. produce cell structures from chemical building blocks
	4. break down ATP, so that ADP and P can be reused
2. In the first stage of cellular respiration, two molecules of pyruvate are produced. In the remaining stages, a number of products are produced, including \_\_\_\_\_. This process occurs in the \_\_\_\_\_.
	1. glucose … mitochondria
	2. water … cytoplasm
	3. CO2 … mitochondria
	4. O2 … plasma membrane
3. The electron transport chain is a series of electron carrier molecules. In eukaryotes, where can this structure be found?
	1. smooth endoplasmic reticulum
	2. plasma membrane
	3. mitochondria
	4. Golgi apparatus
4. What is the fate of the electrons that are stripped from glucose during cellular respiration?
	1. They result in the formation of heat.
	2. They are donated to NADH.
	3. They are used to oxidize oxygen.
	4. They are used to form water.
5. Cellular respiration completely breaks down a glucose molecule through glycolysis and the citric acid cycle. However, these two processes yield only a few ATPs. The majority of the energy the cell derives from glucose is \_\_\_\_\_.
	1. passed to the oxygen used in the electron transport chain
	2. lost as heat
	3. found in NADH and FADH2
	4. stored in the carbon dioxide molecules released by the processes
6. A muscle cell deprived of molecular oxygen will convert glucose to lactic acid to\_\_\_\_.
	1. gain energy through chemiosmosis
	2. recycle NADH through fermentation
	3. gain 2 ATP through glycolysis
	4. to transition into the citric acid cycle
7. Fat is the most efficient molecule for long-term energy storage even compared to carbohydrates because \_\_\_\_\_.
	1. when compacted, fat occupies less volume than an equivalent amount of carbohydrate
	2. compared to carbohydrates, fat produces fewer toxic by-products when it's metabolized
	3. fats can directly enter the electron transport chain, the phase of respiration that produces the most ATP
	4. with their numerous hydrogen atoms, fats provide an abundant source of high-energy electrons
8. Which metabolic pathway is common to both cellular respiration and fermentation?
9. oxidative phosphorylation
10. glycolysis
11. chemiosmosis
12. the citric acid cycle
13. In addition to ATP, what are the end products of glycolysis?
14. CO2 and NADH
15. CO2 and pyruvate
16. NADH and pyruvate
17. CO2 and H2O
18. Which of the following produces the most ATP when glucose (C6H12O6) is completely oxidized to carbon dioxide (CO2) and water?
19. citric acid cycle
20. glycolysis
21. oxidation of pyruvate to acetyl CoA
22. oxidative phosphorylation (chemiosmosis)
23. The ATP made during fermentation is generated by which of the following?
24. substrate-level phosphorylation
25. aerobic respiration
26. chemiosmosis
27. oxidative phosphorylation
28. Which of the following statements describes the results of this reaction? C6H12O6 + 6 O2 → 6 CO2 + 6 H2O + Energy
29. C6H12O6 is reduced and CO2 is oxidized.
30. O2 is oxidized and H2O is reduced.
31. C6H12O6 is oxidized and O2 is reduced.
32. CO2 is reduced and O2 is oxidized.
33. Inside an active mitochondrion, most electrons follow which pathway?
34. pyruvate → citric acid cycle → ATP → NADH → oxygen
35. citric acid cycle → FADH2 → electron transport chain → ATP
36. citric acid cycle → NADH → electron transport chain → oxygen
37. glycolysis → NADH → oxidative phosphorylation → ATP → oxygen
38. Which of the following occurs in the cytosol of a eukaryotic cell?
39. citric acid cycle
40. fermentation and chemiosmosis
41. oxidative phosphorylation
42. glycolysis and fermentation