

CHAPTER 8

Respiration in Plants

Glycolysis & Fermentation

- What is the net gain of ATP when each molecule of glucose is converted to two molecules of pyruvic acid? (2022)
 - Eight
 - Four
 - Six
 - Two
- What amount of energy is released from glucose during lactic acid fermentation? (2022)
 - Less than 7%
 - Approximately 15%
 - More than 18%
 - About 10%
- Conversion of glucose to glucose-6-phosphate, the first irreversible reaction of glycolysis, is catalysed by (2019)
 - Aldolase
 - Hexokinase
 - Enolase
 - Phosphofructokinase
- In which one of the following processes CO_2 is not released? (2014)
 - Lactate fermentation
 - Aerobic respiration in plants
 - Aerobic respiration in animals
 - Alcoholic fermentation
- The number of substrate level phosphorylations in one turn of citric acid cycle is: (2020)
 - One
 - Two
 - Three
 - Zero
- Pyruvate dehydrogenase activity during aerobic respiration requires: (2020-Covid)
 - Iron
 - Cobalt
 - Magnesium
 - Calcium
- What is the role of NAD^+ in cellular respiration? (2018)
 - It functions as an enzyme
 - It functions as an electron carrier
 - It is a nucleotide source for ATP synthesis
 - It is the final electron acceptor for anaerobic respiration
- Which of these statements is incorrect? (2018)
 - Enzymes of TCA cycle are present in mitochondrial matrix.
 - Glycolysis occurs in cytosol.
 - Glycolysis operates as long as it is supplied with NAD that can pick up hydrogen atoms.
 - Oxidative phosphorylation takes place in outer mitochondrial membrane.
- Which statement is wrong for Krebs' cycle? (2017-Delhi)
 - There are three points in the cycle where NAD^+ is reduced to $\text{NADH} + \text{H}^+$
 - There is one point in the cycle where FAD^+ is reduced to FADH_2
 - During conversion of succinyl CoA to succinic acid, a molecule of GTP is synthesised
 - The cycle starts with condensation of acetyl group (acetyl CoA) with pyruvic acid to yield citric acid

Aerobic Respiration

- Which of the following statements is incorrect? (2021)
 - In ETC (Electron Transport Chain), one molecule of $\text{NADH} + \text{H}^+$ gives rise to 2 ATP molecules, and one FADH_2 gives rise to 3 ATP molecules.
 - ATP is synthesized through complex V.
 - Oxidation - reduction reactions produce proton gradient in respiration,
 - During aerobic respiration, role of oxygen is limited to the terminal stage.
- Oxidative phosphorylation is: (2016 - II)
 - Addition of phosphate group to ATP.
 - Formation of ATP by energy released from electrons removed during substrate oxidation.
 - Formation of ATP by transfer of phosphate group from a substrate to ADP
 - Oxidation of phosphate group in ATP

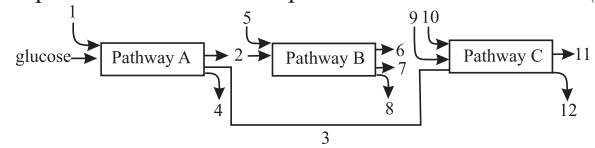
Respiration in Plants

12. Cytochromes are found in: (2015)
- Cristae of mitochondria
 - Lysosomes
 - Matrix of mitochondria
 - Outer wall of mitochondria

Respiratory Balance Sheet & Amphibolic Pathway

13. Which of the following biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins? (2016 - II, 2003)
- Pyruvic acid
 - Acetyl CoA
 - Glucose-6-phosphate
 - Fructose 1,6-bisphosphate

14. The three boxes in this diagram represent the three major biosynthetic pathways in aerobic respiration. Arrows represent net reactants or products: (2013)



- Arrows numbered 4, 8, and 12 can all be
- FAD^+ or FADH_2
 - NADH
 - ATP
 - H_2O

Respiratory Quotient

15. Respiratory Quotient (RQ) value of tripalmitin is (2019)
- 0.9
 - 0.7
 - 0.07
 - 0.09

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
d	a	b	a	a	a	c	b	d	d	b	a	b	c	b