

NEET RESPIRATION IN PLANTS — ELECTRON TRANSPORT SYSTEM AND OXIDATIVE PHOSPHORYLATION — PYQS

Max. Marks: 44

Questions: 11

Section A (MCQ) — 11 questions

Q.1 The complex II of mitochondrial electron transport chain is also known as [NEET (UG) 2025]

- (1) Cytochrome c oxidase
- (2) NADH dehydrogenase
- (3) Cytochrome bc_1
- (4) Succinate dehydrogenase

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Q.2 Match List I with List II

List-I		List-II	
A.	Citric acid cycle	I.	Cytoplasm
B.	Glycolysis	II.	Mitochondrial matrix
C.	Electron transport system	III.	Intermembrane space of mitochondria
D.	Proton gradient	IV.	Inner mitochondrial membrane

Choose the correct answer from the options given below: [NEET (UG) 2024]

- (1) A-I, B-II, C-III, D-IV (2) A-II, B-I, C-IV, D-III
(3) A-III, B-IV, C-I, D-II (4) A-IV, B-III, C-II, D-I

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Q.3 Match List-I with List-II: [RE-NEET (UG) 2024]

List-I		List-II	
A.	ETS Complex I	I.	NADH Dehydrogenase
B.	ETS Complex II	II.	Cytochrome bc_1
C.	ETS Complex III	III.	Cytochrome c oxidase
D.	ETS Complex IV	IV.	Succinate Dehydrogenase

- (1) A-IV, B-I, C-III, D-II (2) A-I, B-IV, C-II, D-III
(3) A-III, B-I, C-IV, D-II (4) A-I, B-II, C-IV, D-III

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Q.4 Which of the following statements is incorrect?

[NEET (UG) 2021]

- (1) Oxidation-reduction reactions produce proton gradient in respiration
- (2) During aerobic respiration, role of oxygen is limited to the terminal stage.
- (3) In ETC (Electron Transport Chain), one molecule of $NADH + H^+$ gives rise to 2 ATP molecules, and one $FADH_2$ gives rise to 3 ATP molecules
- (4) ATP is synthesized through complex V

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Q.5 What is the role of NAD^+ in cellular respiration?

[NEET 2018]

- (1) It is the final electron acceptor for anaerobic respiration.
- (2) It functions as an enzyme.
- (3) It functions as an electron carrier.
- (4) It is a nucleotide source for ATP synthesis.

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Q.6 Which of these statements is incorrect?

[NEET 2018]

- (1) Glycolysis operates as long as it is supplied with NAD that can pick up hydrogen atoms.
- (2) Enzymes of TCA cycle are present in mitochondrial matrix.
- (3) Oxidative phosphorylation takes place in outer mitochondrial membrane.
- (4) Glycolysis occurs in cytosol.

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Q.7 Oxidative phosphorylation is [NEET 2016 (Phase 2)]

- (1) formation of ATP by transfer of phosphate group from a substrate to ADP
- (2) oxidation of phosphate group in ATP
- (3) addition of phosphate group to ATP
- (4) formation of ATP by energy released from electrons removed during substrate oxidation.

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Q.8 Cytochromes are found in [AIPMT 2015 (Cancelled)]

- (1) cristae of mitochondria
- (2) lysosomes
- (3) matrix of mitochondria
- (4) outer wall of mitochondria.

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Q.9 In mitochondria, protons accumulate in the

[AIPMT 2011 (Mains)]

- (1) outer membrane (2) inner membrane
- (3) intermembrane space (4) matrix

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Q.10 The chemiosmotic coupling hypothesis of oxidative phosphorylation proposes that adenosine triphosphate (ATP) is formed because

[AIPMT 2008]

- (1) a proton gradient forms across the inner membrane
- (2) there is a change in the permeability of the inner mitochondrial membrane toward adenosine diphosphate (ADP)
- (3) high energy bonds are formed in mitochondrial proteins
- (4) ADP is pumped out of the matrix into the intermembrane space

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Q.11 Cytochrome is

[AIPMT 2001]

- (1) metallo flavo protein
- (2) Fe containing porphyrin pigment
- (3) glycoprotein
- (4) lipid.

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	4	2	2	3	3	3	4	1	3	1	2