

NEET PHOTOSYNTHESIS IN HIGHER PLANTS — BIOSYNTHETIC PHASE: CALVIN CYCLE (C₃ PATHWAY) — PYQS

Max. Marks: 56

Questions: 14

Section A (MCQ) — 14 questions

Q.1 The enzyme required for carboxylation in the Calvin cycle is : [NEET (UG) 2026]

- (1) PEP carboxylase
- (2) RuBP carboxylase – oxygenase
- (3) Carboxypeptidase
- (4) Hexokinase

 Scan or tap for the
full solution


Q.2 How many ATP and NADPH molecules are required to make one molecule of glucose through the Calvin pathway ? [NEET (UG) 2026]

- (1) 12 ATP and 18 NADPH
- (2) 18 ATP and 12 NADPH
- (3) 6 ATP and 12 NADPH
- (4) 24 ATP and 18 NADPH

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full solution


Q.3 How many turns of Calvin cycle are required for the formation of three molecules of glucose? [RE-NEET (UG) 2026]

- (1) 18
- (2) 6
- (3) 3
- (4) 1

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full solution


Q.4 Which of the following statements about RuBisCO is true? [NEET (UG) 2025]

- (1) It is an enzyme involved in the photolysis of water
- (2) It catalyzes the carboxylation of RuBP
- (3) It is active only in the dark
- (4) It has higher affinity for oxygen than carbon dioxide

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full solution


Q.5 How many molecules of ATP and NADPH are required for every molecule of CO₂ fixed in the Calvin cycle? [NEET (UG) 2024]

- (1) 2 molecules of ATP and 3 molecules of NADPH
- (2) 2 molecules of ATP and 2 molecules of NADPH
- (3) 3 molecules of ATP and 3 molecules of NADPH
- (4) 3 molecules of ATP and 2 molecules of NADPH

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full solution


Q.6 Which of the following are required for the dark reaction of photosynthesis?

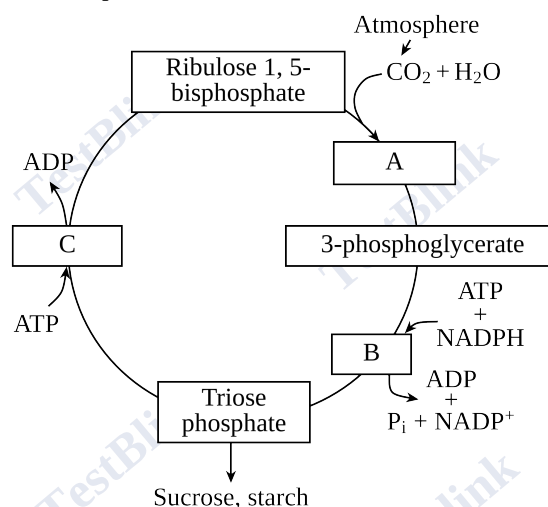
- A. Light
- B. Chlorophyll
- C. CO₂
- D. ATP
- E. NADPH

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

- (1) A, B and C only
- (2) B, C and D only
- (3) C, D and E only
- (4) D and E only

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full solution


Q.7 Observe the given figure. Identify the different stages labelled with alphabets by selecting the correct option. [RE-NEET (UG) 2024]



- (1) A-Carboxylation, B-Regeneration, C-Reduction
 (2) A-Reduction, B-Decarboxylation, C-Regeneration
 (3) A-Carboxylation, B-Reduction, C-Regeneration
 (4) A-Reduction, B-Carboxylation, C-Regeneration

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Q.8 How many ATP and NADPH are required for the synthesis of one molecule of Glucose during Calvin cycle? [NEET (UG) 2023]

- (1) 18 ATP and 12 NADPH
 (2) 12 ATP and 16 NADPH
 (3) 18 ATP and 16 NADPH
 (4) 12 ATP and 12 NADPH

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Q.9 When one CO_2 molecule is fixed as one molecule of triose phosphate, which of the following photochemically made, high energy chemical intermediates are used in the reduction phase?

[NEET (UG) 2022 (Phase 2)]

- (1) 2 ATP + 2 NADPH (2) 1 ATP + 1 NADPH
 (3) 1 ATP + 2 NADPH (4) 2 ATP + 1 NADPH

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Q.10 PGA as the first CO_2 fixation product was discovered in photosynthesis of

[AIPMT 2010 (Prelims)]

- (1) bryophyte (2) gymnosperm
 (3) angiosperm (4) alga

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Q.11 In C_3 plants, the first stable product of photosynthesis during the dark reaction is

[AIPMT 2004]

- (1) malic acid
 (2) oxaloacetic acid
 (3) 3-phosphoglyceric acid
 (4) phosphoglyceraldehyde

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Q.12 In photosynthesis energy from light reaction to dark reaction is transferred in the form of [AIPMT 2002]

- (1) ADP (2) ATP
 (3) RuDP (4) chlorophyll

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Q.13 For assimilation of one CO_2 molecule, the energy required in form of ATP and NADPH_2 are

[AIPMT 2000]

- (1) 2 ATP and 2 NADPH_2
 (2) 5 ATP and 3 NADPH_2
 (3) 3 ATP and 2 NADPH_2
 (4) 18 ATP and 12 NADPH_2

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Q.14 For the synthesis of one glucose molecule the Calvin cycle operates for [AIPMT 2000]

- (1) 2 times (2) 4 times (3) 6 times (4) 8 times

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	2	1	2	4	3	3	1	1	4	3
Ques.	12	13	14								
Ans.	2	3	3								