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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

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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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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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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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Q.5 How many molecules of ATP and NADPH are required for every molecule of CO_2 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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Q.6 Which of the following are required for the dark reaction of photosynthesis?

A. Light B. Chlorophyll
C. CO_2 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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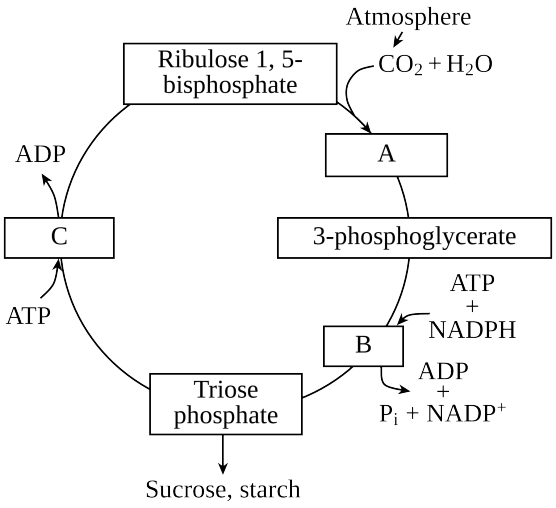
Q.7 Observe the given figure. Identify the different stages labelled with alphabets by selecting the correct option. [RE-NEET (UG) 2024]



(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**								