

## NEET PHOTOSYNTHESIS IN HIGHER PLANTS — PYQS

Max. Marks: 312

Questions: 78

### Section A (MCQ) — 78 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** Find the incorrect statement(s) about photosynthesis from the following :

- A. The water splitting complex is associated with PSI.
- B.  $C_4$  plants use the  $C_3$  pathway of  $CO_2$  fixation as the main biosynthetic pathway.
- C. In  $C_4$  plants, photorespiration does not occur.
- D.  $C_3$  plants exhibit 'Kranz' anatomy.
- E. ATP synthesis in chloroplast occurs through chemiosmosis.

Choose the answer from the options given below :

[NEET (UG) 2026]

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

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**Q.3** 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

Scan or tap for the full solution



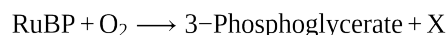
**Q.4** How many turns of Calvin cycle are required for the formation of three molecules of glucose? [RE-NEET (UG) 2026]

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

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**Q.5** Photorespiration reaction catalyzed by RuBisCo is shown below:



Identify "X" from the given options:

[RE-NEET (UG) 2026]

- (1) Malate                              (2) Phosphoenolpyruvate
- (3) 2-Phosphoglycolate          (4) Oxaloacetate

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**Q.6** Which pigment has absorption peak at 700 nm in the photosynthetic reaction centre PS I (P700)? [RE-NEET (UG) 2026]

- (1) Carotenoids                      (2) Chlorophyll b
- (3) Chlorophyll a                      (4) Xanthophylls

Scan or tap for the full solution



**Q.7** Which of the following statements regarding photorespiration are correct?

- A. Does not occur in  $C_3$  plants
- B.  $CO_2$  is consumed and  $O_2$  is generated
- C. Phosphoglycolate is formed
- D. No synthesis of ATP and NADPH

[RE-NEET (UG) 2026]

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

Scan or tap for the full solution



**Q.8** Select the correct sequence of experiments that led to a gradual understanding of photosynthesis in green plants. [RE-NEET (UG) 2026]

- (1) Production of glucose  $\longrightarrow$  role of air  $\longrightarrow$  release of oxygen  $\longrightarrow$  absorption spectra of chlorophyll a and b
- (2) Absorption spectra of chlorophyll a and b  $\longrightarrow$  production of glucose  $\longrightarrow$  release of oxygen  $\longrightarrow$  role of air
- (3) Role of air  $\longrightarrow$  release of oxygen  $\longrightarrow$  production of glucose  $\longrightarrow$  absorption spectra of chlorophyll a and b
- (4) Release of oxygen  $\longrightarrow$  production of glucose  $\longrightarrow$  absorption spectra of chlorophyll a and b  $\longrightarrow$  role of air

Scan or tap for the full solution



**Q.9** 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

Scan or tap for the full solution



**Q.10** Match List-I with List-II

| List - I |               | List - II |                         |
|----------|---------------|-----------|-------------------------|
| A.       | Chlorophyll a | I.        | Yellow-green            |
| B.       | Chlorophyll b | II.       | Yellow                  |
| C.       | Xanthophylls  | III.      | Blue-green              |
| D.       | Carotenoids   | IV.       | Yellow to Yellow-orange |

Choose the option with all correct matches.

[NEET (UG) 2025]

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

Scan or tap for the full solution



**Q.11** How many molecules of ATP and NADPH are required for every molecule of  $\text{CO}_2$  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

Scan or tap for the full solution



**Q.12** Which of the following are required for the dark reaction of photosynthesis?

- A. Light                      B. Chlorophyll  
C.  $\text{CO}_2$                       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.13** Given below are two statements:

**Statement-I:** In  $\text{C}_3$  plants, some  $\text{O}_2$  binds to RuBisCO, hence  $\text{CO}_2$  fixation is decreased.

**Statement-II:** In  $\text{C}_4$  plants, mesophyll cells show very little photorespiration while bundle sheath cells do not show photorespiration.

In the light of the above statements, choose the correct answer from the options given below:

[NEET (UG) 2024]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



**Q.14** Which of the following are required for the light reaction of Photosynthesis?

- A.  $\text{CO}_2$                       B.  $\text{O}_2$   
C.  $\text{H}_2\text{O}$                       D. Chlorophyll  
E. Light

Choose the correct answer from the options given below:

[RE-NEET (UG) 2024]

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

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**Q.15** Which one of the following products diffuses out of the chloroplast during photosynthesis?

[RE-NEET (UG) 2024]

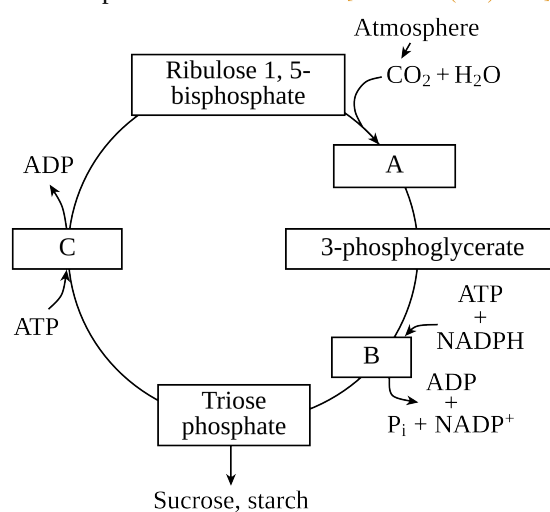
- (1) ADP              (2) NADPH              (3)  $\text{O}_2$               (4) ATP

Scan or tap for the full solution



**Q.16** 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

Scan or tap for the full solution



**Q.17** 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

Scan or tap for the full solution



**Q.18** The reaction centre in PS II has an absorption maximum at [NEET (UG) 2023]

- (1) 700 nm (2) 660 nm (3) 780 nm (4) 680 nm

Scan or tap for the full solution



**Q.19** Which of the following combinations is required for chemiosmosis? [NEET (UG) 2023]

- (1) Membrane, proton pump, proton gradient, NADP synthase
- (2) Proton pump, electron gradient, ATP synthase
- (3) Proton pump, electron gradient, NADP synthase
- (4) Membrane, proton pump, proton gradient, ATP synthase

Scan or tap for the full solution



**Q.20** Given below are two statements:

**Statement-I:** The primary  $\text{CO}_2$  acceptor in  $\text{C}_4$  plants is phosphoenolpyruvate and is found in the mesophyll cells.

**Statement-II:** Mesophyll cells of  $\text{C}_4$  plants lack RuBisCO enzyme.

In the light of the above statements, choose the correct answer from the options given below :

[NEET (UG) 2022]

- (1) Both Statement-I and Statement-II are correct
- (2) Both Statement-I and Statement-II are incorrect
- (3) Statement-I is correct but Statement-II is incorrect
- (4) Statement-I is incorrect but Statement-II is correct

Scan or tap for the full solution



**Q.21** Which one of the following is not true regarding the release of energy during ATP synthesis through chemiosmosis? It involves: [NEET (UG) 2022]

- (1) Breakdown of proton gradient
- (2) Breakdown of electron gradient
- (3) Movement of protons across the membrane to the stroma
- (4) Reduction of NADP to  $\text{NADPH}_2$  on the stroma side of the membrane

Scan or tap for the full solution



**Q.22** What is the role of large bundle sheath cells found around the vascular bundles in  $\text{C}_4$  plants? [NEET (UG) 2022]

- (1) To provide the site for photorespiratory pathway
- (2) To increase the number of chloroplast for the operation of Calvin cycle
- (3) To enable the plant to tolerate high temperature
- (4) To protect the vascular tissue from high light intensity

Scan or tap for the full solution



**Q.23** When one  $\text{CO}_2$  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

Scan or tap for the full solution



**Q.24** Identify the correct statements regarding chemiosmotic hypothesis:

Choose the correct answer from the options given below:

- A. Splitting of the water molecule takes place on the inner side of the membrane.
- B. Protons accumulate within the lumen of the thylakoids.
- C. Primary acceptor of electron transfers the electrons to an electron carrier.
- D. NADP reductase enzyme is located on the stroma side of the membrane.
- E. Protons increase in number in stroma.

[NEET (UG) 2022 (Phase 2)]

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

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**Q.25** The first stable product of  $\text{CO}_2$  fixation in *Sorghum* is [NEET (UG) 2021]

- (1) Phosphoglyceric acid (2) Pyruvic acid
- (3) Oxaloacetic acid (4) Succinic acid

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**Q.26** Which of the following statements is incorrect?

[NEET (UG) 2021]

- (1) Cyclic photophosphorylation involves both PS I and PS II
- (2) Both ATP and NADPH +  $H^+$  are synthesized during non-cyclic photophosphorylation.
- (3) Stroma lamellae have PS I only and lack NADP reductase
- (4) Grana lamellae have both PS I and PS II

Scan or tap for the full solution



**Q.27** In light reaction, plastoquinone facilitates the transfer of electrons from [NEET (UG) 2020]

- (1) PS-I to ATP synthase
- (2) Cytb<sub>6</sub>f complex to PS-I
- (3) PS-I to NADP<sup>+</sup>
- (4) PS-II to Cytb<sub>6</sub>f complex

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**Q.28** The oxygenation activity of RuBisCO enzyme in photorespiration leads to the formation of

[NEET (UG) 2020]

- (1) 1 molecule of 3-C compound and 1 molecule of 2-C compound
- (2) 1 molecule of 3-C compound
- (3) 1 molecule of 6-C compound
- (4) 2 molecules of 3-C compound

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**Q.29** Oxygen is not produced during photosynthesis by

[NEET 2018]

- |                  |                            |
|------------------|----------------------------|
| (1) <i>Cycas</i> | (2) Green sulphur bacteria |
| (3) <i>Chara</i> | (4) <i>Nostoc</i>          |

Scan or tap for the full solution



**Q.30** Which of the following is not a product of light reaction of photosynthesis? [NEET 2018]

- (1) Oxygen (2) NADH (3) ATP (4) NADPH

Scan or tap for the full solution



**Q.31** With reference to factors affecting the rate of photosynthesis, which of the following statements is not correct? [NEET 2017]

- (1) Increasing atmospheric CO<sub>2</sub> concentration up to 0.05% can enhance CO<sub>2</sub> fixation rate.
- (2) C<sub>3</sub> plants respond to higher temperature with enhanced photosynthesis while C<sub>4</sub> plants have much lower temperature optimum.
- (3) Tomato is a greenhouse crop which can be grown in CO<sub>2</sub>-enriched atmosphere for higher yield.
- (4) Light saturation for CO<sub>2</sub> fixation occurs at 10% of full sunlight.

Scan or tap for the full solution



**Q.32** Phosphoenol pyruvate (PEP) is the primary CO<sub>2</sub> acceptor in [NEET 2017]

- |                                              |                           |
|----------------------------------------------|---------------------------|
| (1) C <sub>4</sub> plants                    | (2) C <sub>2</sub> plants |
| (3) C <sub>3</sub> and C <sub>4</sub> plants | (4) C <sub>3</sub> plants |

Scan or tap for the full solution



**Q.33** In a chloroplast the highest number of protons are found in [NEET 2016 (Phase 1)]

- |                         |                          |
|-------------------------|--------------------------|
| (1) intermembrane space | (2) antennae complex     |
| (3) stroma              | (4) lumen of thylakoids. |

Scan or tap for the full solution



**Q.34** Emerson's enhancement effect and Red drop have been instrumental in the discovery of [NEET 2016 (Phase 1)]

- (1) photophosphorylation and cyclic electron transport
- (2) oxidative phosphorylation
- (3) photophosphorylation and non-cyclic electron transport
- (4) two photosystems operating simultaneously.

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**Q.35** A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant? [NEET 2016 (Phase 1)]

- |                    |                    |
|--------------------|--------------------|
| (1) CAM            | (2) Nitrogen fixer |
| (3) C <sub>3</sub> | (4) C <sub>4</sub> |

Scan or tap for the full solution



**Q.36** The process which makes major difference between C<sub>3</sub> and C<sub>4</sub> plants is [NEET 2016 (Phase 2)]

- |                      |                  |
|----------------------|------------------|
| (1) glycolysis       | (2) Calvin cycle |
| (3) photorespiration | (4) respiration. |

Scan or tap for the full solution



**Q.37** In photosynthesis, the light-independent reactions take place at [AIPMT 2015]

- (1) photosystem II (2) stromal matrix  
(3) thylakoid lumen (4) photosystem I.

Scan or tap for the full solution



**Q.38** Bundle sheath cells : [NEET 2013 (Karnataka)]

- (1) lack both RuBisCo and PEP carboxylase  
(2) are rich in PEP carboxylase  
(3) are rich in RuBisCo  
(4) lack RuBisCo

Scan or tap for the full solution



**Q.39** Read the following four statements (A – D). How many of the above statements are right?

- A. Both photophosphorylation and oxidative phosphorylation involve uphill transport of protons across the membrane.  
B. In dicot stems, a new cambium originates from cells of pericycle at the time of secondary growth.  
C. Stamens in flowers of *Gloriosa* and *Petunia* are polyandrous.  
D. Symbiotic nitrogen fixers occur in free-living state also in soil. [AIPMT 2012 (Mains)]
- (1) Two (2) Three (3) Four (4) One

Scan or tap for the full solution



**Q.40** A process that makes important difference between  $C_3$  and  $C_4$  plants is [AIPMT 2012 (Prelims)]

- (1) transpiration (2) glycolysis  
(3) photosynthesis (4) photorespiration.

Scan or tap for the full solution



**Q.41** The correct sequence of cell organelles during photorespiration is [AIPMT 2012 (Prelims)]

- (1) chloroplast, Golgi-bodies, mitochondria  
(2) chloroplast, rough endoplasmic reticulum, dictyosomes  
(3) chloroplast, peroxisome, mitochondria  
(4) chloroplast, vacuole, peroxisome.

Scan or tap for the full solution



**Q.42** In Kranz anatomy, the bundle sheath cells have [AIPMT 2011 (Mains)]

- (1) thin walls, many intercellular spaces and no chloroplasts  
(2) thick walls, no intercellular spaces and large number of chloroplasts  
(3) thin walls, no intercellular spaces and several chloroplasts  
(4) thick walls, many intercellular spaces and few chloroplasts.

Scan or tap for the full solution



**Q.43** CAM helps the plants in [AIPMT 2011 (Prelims)]

- (1) conserving water (2) secondary growth  
(3) disease resistance (4) reproduction.

Scan or tap for the full solution



**Q.44** Read the following four statements, (i), (ii), (iii) and (iv) and select the right option having both correct statements.

**Statements :** [AIPMT 2010 (Mains)]

- (i) Z scheme of light reaction takes place in presence of PS I only.  
(ii) Only PS I is functional in cyclic photophosphorylation.  
(iii) Cyclic photophosphorylation results into synthesis of ATP and  $NADPH_2$ .  
(iv) Stroma lamellae lack PS II as well as NADP reductase.

- (1) (ii) and (iv) (2) (i) and (ii)  
(3) (ii) and (iii) (4) (iii) and (iv)

Scan or tap for the full solution



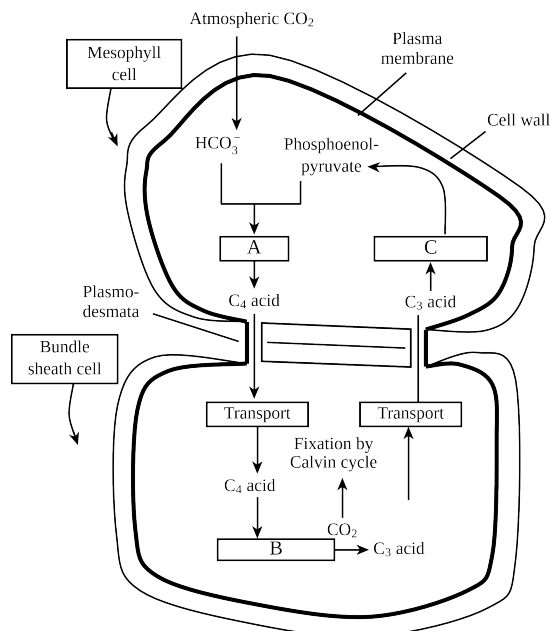
**Q.45** Kranz anatomy is one of the characteristics of the leaves of [AIPMT 2010 (Mains)]

- (1) potato (2) wheat  
(3) sugarcane (4) mustard

Scan or tap for the full solution



**Q.46** Study the pathway given below:



In which of the following options correct words for all the three blanks A, B and C are indicated?

[AIPMT 2010 (Mains)]

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

Scan or tap for the full solution



**Q.47** PGA as the first CO<sub>2</sub> fixation product was discovered in photosynthesis of

[AIPMT 2010 (Prelims)]

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

Scan or tap for the full solution



**Q.48** C<sub>4</sub> plants are more efficient in photosynthesis than C<sub>3</sub> plants due to

[AIPMT 2010 (Prelims)]

- (1) higher leaf area
- (2) presence of larger number of chloroplasts in the leaf cells
- (3) presence of thin cuticle
- (4) lower rate of photorespiration

Scan or tap for the full solution



**Q.49** Cyclic photophosphorylation results in the formation of

[AIPMT 2009]

- (1) ATP and NADPH
- (2) ATP, NADPH and O<sub>2</sub>
- (3) ATP
- (4) NADPH.

Scan or tap for the full solution



**Q.50** Stroma in the chloroplasts of higher plants contains

[AIPMT 2009]

- (1) light-dependent reaction enzymes
- (2) ribosomes
- (3) chlorophyll
- (4) light-independent reaction enzymes.

Scan or tap for the full solution



**Q.51** Electrons from excited chlorophyll molecule of photosystem II are accepted first by

[AIPMT 2008]

- (1) quinone
- (2) ferredoxin
- (3) cytochrome-b
- (4) cytochrome-f

Scan or tap for the full solution



**Q.52** The C<sub>4</sub> plants are photosynthetically more efficient than C<sub>3</sub> plants because

[AIPMT 2008]

- (1) the CO<sub>2</sub> efflux is not prevented
- (2) they have more chloroplasts
- (3) the CO<sub>2</sub> compensation point is more
- (4) CO<sub>2</sub> generated during photorespiration is trapped and recycled through PEP carboxylase

Scan or tap for the full solution



**Q.53** In leaves of C<sub>4</sub> plants malic acid synthesis during CO<sub>2</sub> fixation occurs in

[AIPMT 2008]

- (1) bundle sheath
- (2) guard cells
- (3) epidermal cells
- (4) mesophyll cells

Scan or tap for the full solution



**Q.54** In the leaves of C<sub>4</sub> plants, malic acid formation during CO<sub>2</sub> fixation occurs in the cells of

[AIPMT 2007]

- (1) bundle sheath
- (2) phloem
- (3) epidermis
- (4) mesophyll

Scan or tap for the full solution



**Q.55** The first acceptor of electrons from an excited chlorophyll molecule of photosystem II is

[AIPMT 2007]

- (1) iron-sulphur protein
- (2) ferredoxin
- (3) quinone
- (4) cytochrome

Scan or tap for the full solution



**Q.56** During photorespiration, the oxygen consuming reaction(s) occur in

[AIPMT 2006]

- (1) stroma of chloroplasts
- (2) stroma of chloroplasts and mitochondria
- (3) stroma of chloroplasts and peroxisomes
- (4) grana of chloroplasts and peroxisomes

Scan or tap for the full solution



**Q.57** In photosystem I, the first electron acceptor is [AIPMT 2006]

- (1) an iron-sulphur protein
- (2) ferredoxin
- (3) cytochrome
- (4) plastocyanin

Scan or tap for the full solution



**Q.58** As compared to a  $C_3$ -plant, how many additional molecules of ATP are needed for net production of one molecule of hexose sugar by  $C_4$ -plants?

[AIPMT 2005]

- (1) Two      (2) Six      (3) Twelve      (4) Zero

Scan or tap for the full solution



**Q.59** Photosynthetic Active Radiation (PAR) has the following range of wavelengths. [AIPMT 2005]

- (1) 340–450 nm      (2) 400–700 nm
- (3) 500–600 nm      (4) 450–950 nm

Scan or tap for the full solution



**Q.60** Photosynthesis in  $C_4$  plants is relatively less limited by atmospheric  $CO_2$  levels because [AIPMT 2005]

- (1) effective pumping of  $CO_2$  into bundle sheath cells
- (2) RuBisCo in  $C_4$  plants has higher affinity for  $CO_2$
- (3) four carbon acids are the primary initial  $CO_2$  fixation products
- (4) the primary fixation of  $CO_2$  is mediated via PEP carboxylase.

Scan or tap for the full solution



**Q.61** Chlorophyll in chloroplasts is located in [AIPMT 2005]

- (1) Stroma      (2) Grana
- (3) Pyrenoid      (4) Both (1) and (3)

Scan or tap for the full solution



**Q.62** Chemiosmotic theory of ATP synthesis in the chloroplasts and mitochondria is based on [AIPMT 2005]

- (1) Proton gradient
- (2) Membrane potential
- (3) Accumulation of  $Na^+$  ions
- (4) Accumulation of  $K^+$  ions

Scan or tap for the full solution



**Q.63** 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

Scan or tap for the full solution



**Q.64** Plants adapted to low light intensity have [AIPMT 2004]

- (1) larger photosynthetic unit size than the sun plants
- (2) higher rate of  $CO_2$  fixation than the sun plants
- (3) more extended root system
- (4) leaves modified to spines.

Scan or tap for the full solution



**Q.65** Which fractions of the visible spectrum of solar radiations are primarily absorbed by carotenoids of the higher plants? [AIPMT 2003]

- (1) Blue and green      (2) Green and red
- (3) Red and violet      (4) Violet and blue.

Scan or tap for the full solution



**Q.66** Which one of the following is wrong in relation to photorespiration? [AIPMT 2003]

- (1) It occurs in chloroplast
- (2) It occurs in day time only
- (3) It is a characteristic of  $C_4$  plants
- (4) It is a characteristic of  $C_3$  plants.

Scan or tap for the full solution



**Q.67** In sugarcane plant  $^{14}CO_2$  is fixed to malic acid, in which the enzyme that fixes  $CO_2$  is [AIPMT 2003]

- (1) ribulose biphosphate carboxylase
- (2) phosphoenolpyruvic acid carboxylase
- (3) ribulose phosphate kinase
- (4) fructose phosphate.

Scan or tap for the full solution



- Q.68** Stomata of CAM plants [AIPMT 2003]  
 (1) are always open  
 (2) open during the day and close at night  
 (3) open during the night and close during the day  
 (4) never open.

Scan or tap for the full solution



- Q.69** Which element is located at the centre of the porphyrin ring in chlorophyll? [AIPMT 2003]  
 (1) Calcium (2) Magnesium  
 (3) Potassium (4) Manganese

Scan or tap for the full solution



- Q.70** Which one of the following concerns photophosphorylation? [AIPMT 2003]  
 (1)  $\text{ADP} + \text{AMP} \xrightarrow{\text{Light energy}} \text{ATP}$   
 (2)  $\text{ADP} + \text{Inorganic PO}_4 \xrightarrow{\text{Light energy}} \text{ATP}$   
 (3)  $\text{ADP} + \text{Inorganic PO}_4 \longrightarrow \text{ATP}$   
 (4)  $\text{AMP} + \text{Inorganic PO}_4 \xrightarrow{\text{Light energy}} \text{ATP}$

Scan or tap for the full solution



- Q.71** Which of the following absorbs light energy for photosynthesis? [AIPMT 2002]  
 (1) Chlorophyll (2) Water molecule  
 (3)  $\text{O}_2$  (4) RuBP

Scan or tap for the full solution



- Q.72** 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

Scan or tap for the full solution



- Q.73** Which pigment system is inactivated in red drop? [AIPMT 2001]  
 (1) PS-I and PS-II (2) PS-I  
 (3) PS-II (4) None of the above

Scan or tap for the full solution



- Q.74** Which pair is wrong? [AIPMT 2001]  
 (1)  $\text{C}_3$ -maize  
 (2)  $\text{C}_4$ -Kranz anatomy  
 (3) Calvin cycle-PGA  
 (4) Hatch and Slack cycle-OAA

Scan or tap for the full solution



- Q.75** Which is the first  $\text{CO}_2$  acceptor enzyme in  $\text{C}_4$  plants? [AIPMT 2000]  
 (1) RuDP carboxylase (2) Phosphoric acid  
 (3) RuBisCO (4) PEP- carboxylase

Scan or tap for the full solution



- Q.76** For assimilation of one  $\text{CO}_2$  molecule, the energy required in form of ATP and  $\text{NADPH}_2$  are [AIPMT 2000]  
 (1) 2 ATP and 2  $\text{NADPH}_2$   
 (2) 5 ATP and 3  $\text{NADPH}_2$   
 (3) 3 ATP and 2  $\text{NADPH}_2$   
 (4) 18 ATP and 12  $\text{NADPH}_2$

Scan or tap for the full solution



- Q.77** 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

Scan or tap for the full solution



- Q.78** The first step for initiation of photosynthesis will be [AIPMT 2000]  
 (1) photolysis of water  
 (2) excitation of chlorophyll molecules due to absorption of light  
 (3) ATP formation  
 (4) glucose formation

Scan or tap for the full solution



### ANSWER KEY

| Ques. | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 |
|-------|----|----|----|----|----|----|----|----|----|----|----|
| Ans.  | 2  | 4  | 2  | 1  | 3  | 3  | 3  | 3  | 2  | 4  | 4  |
| Ques. | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| Ans.  | 3  | 3  | 2  | 3  | 3  | 1  | 4  | 4  | 1  | 2  | 2  |
| Ques. | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| Ans.  | 1  | 3  | 3  | 1  | 4  | 1  | 2  | 2  | 2  | 1  | 4  |
| Ques. | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| Ans.  | 4  | 4  | 3  | 2  | 3  | 1  | 4  | 3  | 2  | 1  | 1  |
| Ques. | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 |
| Ans.  | 3  | 4  | 4  | 4  | 3  | 4  | 1  | 2  | 4  | 4  | 3  |
| Ques. | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 |
| Ans.  | 3  | 1  | 3  | 2  | 4  | 2  | 1  | 3  | 1  | 4  | 3  |
| Ques. | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 |
| Ans.  | 2  | 3  | 2  | 2  | 1  | 2  | 3  | 1  | 4  | 3  | 3  |
| Ques. | 78 |    |    |    |    |    |    |    |    |    |    |
| Ans.  | 2  |    |    |    |    |    |    |    |    |    |    |