NEET - C13 - PHOTOSYNTHESIS IN HIGHER PLANTS

1. **Which one is essential for the respiration as well as photosynthesis?**

   A. Rubisco B. Plastocyanin

   C. Ubiquinone D. Cytochrome

2. **How many Calvin cycles are required to produce 5 molecules of glucose?**

   A. 60 B. 15

   C. 30 D. 90

3. **A reduction in the quantity of oxygen evolution during photosynthesis may be observed at**

   A. light having wavelenght more than 680 nm

   B. light having wavelenght less than 680 nm

   C. light having wavelenght 560 nm

   D. light having wavelenght less than 360 nm

4. **In CAM-plants, carbon dioxide required for photosynthesis enters the plant body during**

   A. day time through the lenticels

   B. night through the stomata, which are kept open

   C. day time when the stomata are open

   D. night when the hydathodes are open

5. **C_4-plants differ from C_3-plants in respect to**

   A. number of CO_2 molecules used

   B. substrate, which accept the CO_2 molecules

   C. the final product

   D. number of ATP formed

6. **Which of the following is the first compound that accepts carbon dioxide during dark phase of photosynthesis?**

   A. NADP B. RuBP

   C. Ferredoxin D. Cytochrome

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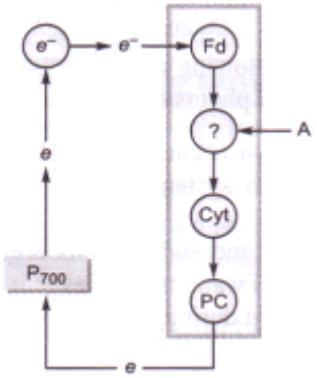
7. In the given chart of photophosphorylation. What does 'A' represent?



A. PC B. FRS

C. PQ D. Cyt-a_3

8. Photosynthetic pigments in chloroplast are embedded in the membrane of

A. photoglobin B. matrix

C. thylakoid D. mitochondria

9. Photosynthesis in C_4-plants is relatively less limited by atmospheric carbon dioxide levels because

A. four carbon acids are the initial carbon dioxide acceptors

B. the primary fixation of carbon dioxide is mediated via PEP carboxylase

C. effective pumping of CO_2 into bundle sheath cells

D. Rubisco in C_4-plants has higher affinity for CO_2

10. Photorespiration in C_3-plants starts from

A. phosphoglycerate B. phosphoglycolate

C. glycerate D. glycine

11. Sunken stomata are usually found in

A. C_3 plants B. CAM plants

C. insectivorous plants D. phanerogams

12. Which statement about photosynthesis is false?

A. The electron carriers involved in photophosphorylation are located on the thylakoid membranes

B. Photosynthesis is a redox process, in which water is oxidised and carbon dioxide is reduced

C. The enzymes required for carbon fixation are located only in the grana of chlorop lasts

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D. In green plants, both PS-I and PS-II are required for the formation of $NADP+H^+$

13. Cyclic-photophosphorylation results in the formation of

A. NADPH

B. ATP and NADPH

C. ATP, NADPH and oxygen

D. ATP

14. Match the name of the scientists given under Column I with their important contributions given under Column II, choose the answer, which gives correct combination of the alphabets.

Column I (Scientist)	Column II (Contribution)
A. Peter Mitchell	1. Law of limiting factor
B. Blackman	2. Dark reaction
C. Daniel Arnonn	3. Photosynthetic phosphorylation
D. Melvin Calvin	4. Chemiosmotic hypothesis

A. a-4, b-1, c-3, d-2 B. a-1, b-4, c-2, d-3

C. a-2, b-1, c-3, d-4 D. a-4, b-3, c-2, d-1

15. Chlorophyll-a and b differ in having

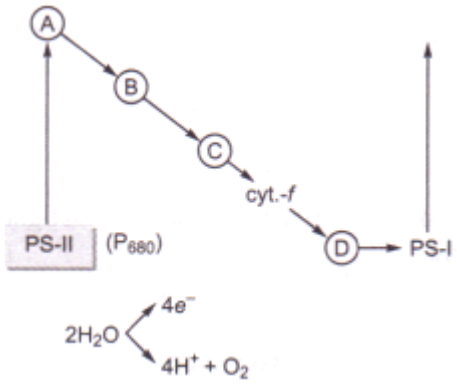
A. chlorophyll-a has a methyl group and chlorophyll-b has aldehyde group in position X

B. chlorophyll-a has an aldehyde group and chlorophyll-b has a methyl group in position X

C. chlorophyll-a has a carboxyl group and chlorophyll-b has an aldehyde group in position X

D. chlorophyll-a has an ethyl group and chlorophyll-b has an aldehyde group in position X

16. In the given schematic diagram, which is plastocyanin?



A. C B. D

C. A D. B

17. Sugarcane show high efficiency of carbon dioxide fixation because of

A. Calvin cycle B. Hatch and Slack cycle

C. TCA cycle D. greater sunlight

18. What is true for photosynthesis?

A. Carbon dioxide is oxidised and water is reduced

B. Carbon dioxide is reduced and water is oxidised

C. Both carbon dioxide and water are reduced

D. Both carbon dioxide and water are oxidised

19. Plastocyanin contains

A. copper B. iron

C. calcium D. potassium

20. In grana of chloroplast, the reaction ADP + P_1 = ATP during day shows

A. oxidative phosphorylation B. photophosphorylation

C. substrate level phosphorylation D. dephosphorylation

21. Which of the following statements regarding C4 -plants is false?

A. The primary CO_2 acceptor is a 5-carbon molecule

B. The initial carboxylation reaction occurs in mesophyll

C. The leaves that fix CO_2 have two cell types

D. The mesophyll cells lack Rubisco enzyme

22. In which one of the following nitrogen is not a constituent?

A. Invertase B. Pepsin

C. Idioblast D. Bacteriochlorophyll

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23. The absorption spectrum of chlorophyll

A. shows that some colours of light are absorbed more than the others

B. approximates the action spectrum of photosynthesis

C. explains why chlorophyll is a green pigment

D. has all the above properties

24. Which of the following is a simplified equation of photosynthesis?

A. $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} C_5H_{10}O_4 + H_2O + O_2 \uparrow$

B. $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} (CH_2O)_n + O_2 \uparrow$

C. $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} C_3H_6O_3 + CO_2 + O_2 \uparrow$

D. $CO_2 + 2H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light energy}} (CH_2O)_n + H_2O + O2 \uparrow$

25. Study the following columns and choose the correct option.

Column I	Column II
A. Oxygen evolving complex	1. Potassium ferric oxalate
B. Proton gradient	2. High oxygen concentration
C. Hill reagent	3. ATP synthesis
D. Photorespiration	4. Pheophytin
	5. Photolysis of water

A. a-5, b-3, c-1, d-2 B. a-1, b-2, c-4, d-5

C. a-5, b-1, c-4, d-2 D. a-3, b-4, c-5, d-1

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NEET - C13 - PHOTOSYNTHESIS IN HIGHER PLANTS - KEY

1. D	2. C	3. A	4. B	5. B
6. B	7. C	8. C	9. B	10. B
11. B	12. C	13. D	14. A	15. A
16. B	17. B	18. B	19. A	20. B
21. A	22. C	23. D	24. D	25. A