DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : BIOLOGY**
Date : **DPP No. : 10**

Topic :- Photosynthesis in Higher Plants

1. As compound 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?
   a) 2 b) 6 c) 0 d) 12

2. Proton gradient is broken down due to
   a) Movement of electrons across the membrane to stroma
   b) Movement of electrons across the membrane to lumen
   c) Movement of proton across the membrane to lumen
   d) Movement of proton across the membrane to stroma

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

4. The membrane of thylakoid is called
   a) Cell membrane b) Fret membrane
   c) Granum membrane d) Thylakoid membrane

5. The enzyme responsible for primary carboxylation in C_3-plants is
   a) Hexokinase b) Succinic dehydrogenase
   c) Pyruvate carboxylase d) RuBP carboxylase oxygenase

6. The law of limiting factors was proposed with particular reference to photosynthesis. Identify the scientise, who proposed this law?
   a) Calvin b) Weismann c) Emerson d) Blackman

7. The synthesis of one molecule of glucose during Calvin cycle requires
   a) 12 molecules of ATP and 18 molecules of $NADPH_2$
   b) 6 molecules of ATP and 12 molecules of $NADPH_2$
   c) 18 molecules of ATP and 12 molecules of $NADPH_2$
   d) 12 molecules each of ATP and $NADPH_2$

8. The enzymatic reactions incorporate CO_2 into the plants leading to the synthesis of sugar in
a) Stroma b) Stroma lamella c) Grana d) Both (a) and (b)

9. In CAM-plants, carbon dioxide acceptor is
a) RuBP b) PEP c) OAA d) PGA

10. PEP carboxylase
I. is involved in atleast some CO_2 fixation in both C_3 and C_4-plants
II. Catalyses the reaction of fixing CO_2 into pyruvic acid in bundle sheath cells
III. is capable of fixing CO_2 more efficiently at lower atmospheric CO_2 concentration than RuBP carboxylase
Select the correct option
a) I and II b) II and III c) I, II and III d) Only III

11. Which factor is not limiting in normal condition for photosynthesis?
a) Air b) Carbon dioxide c) Water d) Chlorophyll

12. PS is made up of which of the following?
a) Reaction centre b) Antenna molecule
c) Both (a) and (b) d) Reaction centre and H_2O

13. In higher plants, the shape of the chloroplast is
a) Discoid b) Cup-shaped c) Girdle-shaped d) Reticulate

14. Identify the correct combination of the following

substrate	enzyme	Product
I. Phosphoen-ol pyruvate	PEP carboxylase	C_4 acid
II. Malate	Malic enzyme	C_4 acid
III. RuBP	Ribulose 5-phosphate kinase	C_3 acid
IV. Pyruvate	Pyruvate dikinase	C_3 acid

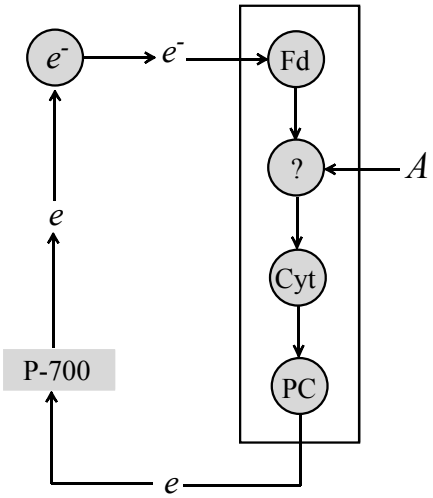
a) III and IV b) I and II c) II and III d) I and IV

15. Cyclic photophosphorylation produces
a) NADPH b) ATP c) $ATP + NADPH_2$ d) $ATP + NADPH_2 + O_2$

16. Phenomenon which converts light energy into chemical energy is

a) Respiration b) Photosynthesis c) Transpiration d) None of these

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



a) PC b) FRS c) PQ d) Cyt $-a_3$

18. In photosystem, antennae includes all pigments except
a) Chlorophyll-*a* b) Chlorophyll-*b* c) Carotenoids d) Xanthophyll

19. I. Tomato
II. Black pepper
III. Mango
From the above option choose the correct answer in respect of green house crops
a) I and III b) III and II c) I, II and III d) I and II

20. Plastocyanin contains
a) Copper b) Iron c) Calcium d) potassium