DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : BIOLOGY**
Date : **DPP No. : 2**

Topic :- Photosynthesis in Higher Plants

1. In sugarcane plant, $^{14}CO_2$ is fixed in a malic acid, in which the enzyme that fixes carbon dioxide is
   a) Ribulose phosphate kinase
   b) Fructose phosphatase
   c) Ribulose bisophosphate carboxylase
   d) Phosphoenol Pyruvic acid carboxylase

2. For yielding one molecule of glucose, the Calvin cycle turns
   a) Two times
   b) Four times
   c) Six times
   d) Eight times

3. The light reaction of photosynthesis end up in the formation of
   a) $NaDH_2$
   b) ATP
   c) Sugar
   d) $NADPH_2$

4. In leaves of C_4-plants, malic acid synthesis during carbon dioxide fixation occurs in
   a) Epidermal cells
   b) Mesophyll cells
   c) Bundle sheath cells
   d) Guard cells

5. Biosynthetic phase of photosynthesis is the formation of
   a) Lipid
   b) Fat
   c) Protein
   d) Sugars

6. What happen to the chloroplast pigment when they absorb light?
   a) They become reduced
   b) They become excited
   c) They lose potential energy
   d) Calvin cycle is triggered

7. In C_4-pathway, the first product identified was
   a) 3-PGA
   b) OAA
   c) 2-PGA
   d) 1-3DPGA

8. Law of limiting factors was given by
   a) Leibig
   b) Blackman
   c) Calvin
   d) Arnon

9. PS-I in cyclic photophosphorylation is involved in the formation of ...A... by ...B... movement of electrons
   What does A and B refer here?
   a) A-ATP; B-down hill redox potential
   b) A-ADP; B-up hill redox potential
   c) A-NADH + H^+; B-down hill energy
   d) A-NADPH + H^+; B-down hill energy

10. The green-coloured pigment present in all autotrophs was named chlorophyll by
a) Pelletier Caventou b) Julius Robert Mayer c) Jean Senebier d) Melvin Calvin

11. Within the chloroplast, there is the membranous system consisting of
I. grana
II. stroma lamellae
III. fluid stroma
Choose the correct option
a) I and II b) II and III c) I and III d) I, II and III

12. Joseph Priestley observed that when mouse alone was placed in a closed bell jar with burning candle, it was suffocated and candle burning extinguished but when mouse was placed with a mint plant in the same bell jar, that mouse stayed alive and candle continued to burn. What he concluded from this experiment?
a) Burning candle remove the air
b) Mint plant restore the air
c) Both (a) and (b)
d) CO_2 is required for burning of candle

13. Organelles involved in photorespiration is/are
I. chloroplast
II. peroxisomes
III. mitochondria
Choose the correct option
a) I and II b) II and III c) III and I d) I, II and III

14. The first step in dark reaction of photosynthesis is
a) Formation of ATP
b) Ionization of water
c) Attachment of carbon dioxide to a pentose sugar
d) Excitement of electron of chlorophyll by a photon of light

15. Calvin cycle is also called
a) Calvin-Benson cycle
b) C_3-cycle
c) Reductive pentose pathway
d) All of the above

16. Plants in which the first product of CO_2 fixation is C_3 acid, *i.e.*, the ...A... pathway, and those in which the first product was C_4 acid (OAA), *i.e.*, the ...B... pathway
Complete the given statement by filling appropriate options in the given blanks
a) A-C_2; B-C_3 b) A-C_3; B-C_4 c) A-C_4; B-C_2 d) A-C_2; B-C_30

17. Photosynthesis is an important process for life on earth because
    a) It is the primary source of all food on earth
    b) It is responsible for the release the of oxygen
    c) It is the only natural process responsible for the utilisation of sunlight
    d) All of the above

18. The mineral involved in the photolysis of water are
    I Manganese II Calcium
    III magnesium IV Chloride
    a) I and II only b) I, II and IV only c) I, II and II only d) I and IV only

19. Calvin cycle represents
    a) Reductive carboxylation b) Substrate level phosphorylation
    c) Dark respiration d) Oxidative carboxylation

20. Identify the correct sequence of enzymes given below which participate in the regeneration phase of Calvin cycle.
    I. Ribulose-5-phosphate isomerase
    II. Ribulose-5-phosphate epimerase
    III. Transketolase
    IV. Triose phosphate isomerase
    a) VI, I, III, II b) III, IV, II, I c) IV, III, I, II d) II, I, IV, III