# ST. LAWRENCE HIGH SCHOOL

**A JESUIT CHRISTIAN MINORITY INSTITUTION**

**WORK SHEET – 25 (solutions)**

**Class: IX Sub: PHOTOSYNTHESIS Date: 12.05.2020**

**Topic: PHOTOSYNTHESIS – C4 And CAM CYCLE F.M. : 15**

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**Choose the correct option: (1x15=15)**

1. C-4 cycle operates in plants like -
   a) Sugarcane b) Maize c) *Pancium* d) All of these
   **Answer : All of these (d)**
2. Important anatomical feature of C-4 plants are :-
   a) Kranz anatomy b) Two types of chloroplasts c) Thick Cuticle d) Both (a) and (b)
   **Answer : Both (a) and (b) (d)**
3. The first stable product of C-4 cycle is :-
   a) Malic acid b)Oxaloacetic acid c) Pyruvic acid d) None of these
   **Answer : Oxaloacetic acid (b)**
4. The primary acceptor of $CO_2$ in C-4 plants is :-
   a) RuBP b) Malic acid c) Phospho-enol-pyruvic acid d) Pyruvic acid
   **Answer : Phospho-enol-pyruvic acid (c)**
5. The enzyme which brings about fixation of $CO_2$ in C-4 plants is :-
   a) Phospho pyruvate kinase b) Rubisco c) Phopho-enol pyruvate carboxylase
   b) None of these
   c) **Answer : Phospho-enol-pyruvate caroxylase (c)**
6. OAA undergoes the process of _____ to produce malic acid and $CO_2$.
   a) Oxidation b) Decarboxylation c) Carboxylation d) Reduction
   **Answer : Decarboxylation (b)**
7. The secondary fixation of $CO_2$ in C-4 cycle is brought about by the enzyme :-
   a) RuBP carboxylase b) RuBP oxygenase c) PEP carboxylase d) All of these
   **Answer : RuBP carboxylase (a)**
8. The important characteristics of plants undergoing CAM are :-
   a) Xerophytic plants b) Stomata open at night c) Belong to the family crassulaceae
   d) All of these
   **Answer : All of these (d)**

9. The fixation of $CO_2$ by RuBP in C-4 plants takes place during :-
   a) night b) day c) mid night d) all day and night
   b) **Answer : day (b)**
10. C-1 cycle operates in :-
   a) Wheat b) Sugarcane c) Methanogenic bacteria d) Mint
   b) **Answer : Methanogenic bacteria (c)**
11. The site for primary fixation of $CO_2$ in C-4 plants is :-
   a) Chloroplasts b) Bundle sheath chloroplasts c) Mesophyll cell chloroplasts
   d) None of these
   **Answer : Mesophyll cell chloroplasts (c)**
12. C-4 cycle is also known as:-
   a) Hatch and slack pathway b) Calvin cycle c) Photorespiration d) Photo oxidation
   **Answer : Hatch and Slack pathway (a)**
13. Malic acid on decarboxylation produces $CO_2$ and ---------- which is transported to mesophyll cells:
   a) Oxaloacetic acid b) Pyruvic acid c) Phospho-enol pyruvate d) RuBP
   **Answer : Pyruvic acid (b)**
14. Which type of plants are photosynthetically more productive than C-3 plants?
   a) CAM plants b) C-4 plants c) C-1 organisms d) All of these
   **Answer : C-4 plants (b)**
15. The steps of C-4 includes :-
   a) Primary fixation of $CO_2$ b) Transport of C-4 acid c) Secondary fixation of $CO_2$
   d)All of these
   **Answer : All of these (d)**

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