

INDIAN SCHOOL NIZWA

CLASS XI A: SUB: BIOLOGY CH 11 PHOTOSYNTHESIS WORK SHEET.

1. Fill in the blanks:

- Enzyme that accepts O₂ during photorespiration _____
- Chlorophyll of mesophyll cells of C₄ plants have a high concentration of _____ enzyme.
- Calvin cycle takes place in _____.
- Noncyclic photophosphorylation needs a constant supply of _____.
- First electron donor in cyclic photophosphorylation is _____.
- First acceptor of CO₂ in C₃ cycle is _____.
- First acceptor of CO₂ in C₄ cycle is _____.
- First CO₂ fixation product formed in C₄ cycle is _____.
- First CO₂ fixation product formed in C₃ cycle is _____.
- Pigments of PSI occur in the _____ part of the chloroplasts

4. Mention the conditions under which PSI of the light reaction works.

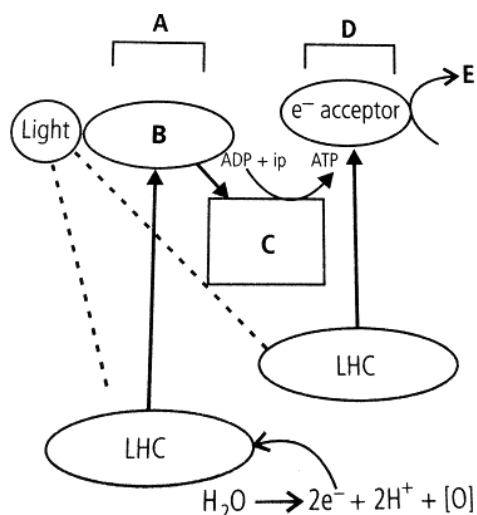
5. The photosynthetic lamellae are taken out from a chloroplast and suspended in nutrient medium in presence of light and CO₂. Will they synthesize glucose? Justify.

6. Why do plants need to reduce photorespiration?

7. Expand PGA, PSI, P700, Rubisco.

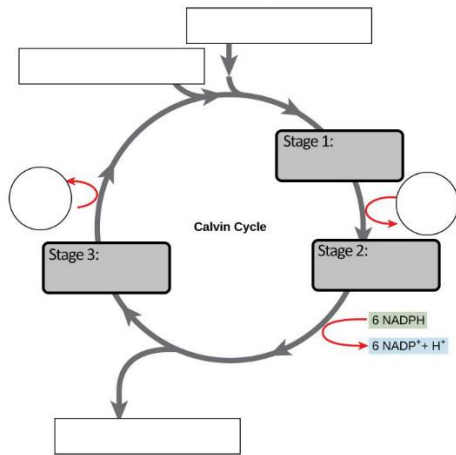
8. Define chemiosmosis. Schematically represent chemiosmosis.

9. Study the diagram and answer the following questions .



- Label A,B,C,D,E .
- Describe the flow of electrons from the water molecule to NADP
- Explain the process of photolysis of water and its significance. Indicate where it occurs in the diagram.

- iv) Explain how the proton gradient across the thylakoid membrane drives ATP synthesis according to the chemiosmotic hypothesis.
- v) Based on the diagram, differentiate between cyclic and non-cyclic photophosphorylation.
10. Label the diagram . Calculate stepwise the number of ATPs used to form one molecule of glucose.



11. Label the diagram A,B,C,D, E, F, G, H, I . Where does this process occur ?

