



TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

BIOLOGY

DPP

DAILY PRACTICE PROBLEMS

DPP NO. 1

BOTANY : PHOTOSYNTHESIS IN HIGHER PLANTS

DPP No. : 1

- A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant?

(1) Nitrogen fixer (2) C_3
 (3) C_4 (4) CAM
- Emerson's enhancement effect and Red drop have been instrumental in the discovery of:

(1) Oxidative phosphorylation
 (2) Photophosphorylation and non-cyclic electron transport
 (3) Two photosystems operating simultaneously
 (4) Photophosphorylation and cyclic electron transport
- How many ATP and $NADPH_2$ are required for the synthesis of one molecule of Glucose during Calvin cycle?

(1) 18 ATP and 12 $NADPH_2$ (2) 12 ATP and 16 $NADPH_2$
 (3) 18 ATP and 16 $NADPH_2$ (4) 12 ATP and 12 $NADPH_2$
- Which of the following combinations is required for chemiosmosis?

(1) membrane, proton pump, proton gradient, NADP synthase
 (2) proton pump, electron gradient, ATP synthase
 (3) proton pump, electron gradient, NADP synthase
 (4) membrane, proton pump, proton gradient, ATP synthase
- The first stable product of CO_2 fixation in sorghum is

(1) Oxaloacetic acid (2) Succinic acid
 (3) Phosphoglyceric acid (4) Pyruvic acid

6. **Statement I:** RuBisCO is the most abundant enzyme in the world.
Statement II: Photorespiration does not occur in C_4 plants.
In the light of the above statements, choose the most appropriate answer from the options given below:
- (1) Statement I is correct but Statement II is incorrect
 - (2) Statement I is incorrect but Statement II is correct
 - (3) Both Statement I and Statement II are correct
 - (4) Both Statement I and Statement II are incorrect
7. Which of the following statements is incorrect?
- (1) Stroma lamellae have PS I only and lack NADP reductase.
 - (2) Grana lamellae have both PS I and PS II
 - (3) Cyclic photophosphorylation involves both PS I and PS II.
 - (4) Both ATP and NADPH + H^+ are synthesized during non-cyclic photophosphorylation.
8. In light reaction, plastoquinone facilitates the transfer of electrons from :
- (1) Cyt_{b_6f} complex to PS-I
 - (2) PS-I to $NADP^+$
 - (3) PS-I to ATP synthase
 - (4) PS-II to Cyt_{b_6f} complex
9. Oxygen is **not** produced during photosynthesis by
- (1) Green sulphur bacteria
 - (2) *Chara*
 - (3) *Cycas*
 - (4) *Nostoc*
10. With reference to factors affecting the rate of photosynthesis, which of the following statements is **not** correct?
- (1) Light saturation for CO_2 fixation occurs at 10% of full sunlight.
 - (2) Increasing atmospheric CO_2 concentration up to 0.05% can enhance CO_2 fixation rate
 - (3) C_3 plants respond to higher temperatures with enhanced photosynthesis while C_4 plants have much lower temperature optimum.
 - (4) Tomato is a greenhouse crop which can be grown in CO_2 enriched atmosphere for higher yield.