



BIOLOGY

BOOKS - CBSE COMPLEMENTARY MATERIAL BIOLOGY (HINGLISH)

PHOTOSYNTHESIS IN HIGHER PLANTS

Very Short Answer Questions

1. Name two photosynthetic pigments belonging to carotenoids.



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2. How many molecules of ATP are required for synthesis of one molecule of glucose in C_3 and C_4 pathways ?



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3. What part of sunlight is most suitable for photosynthesis ?



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4. Name two plants that can carry out photosynthesis at night.



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5. Name the most abundant enzyme found in the world.



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6. Name the scientist who proposed the C_4 pathway. Name one such plants.



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7. Where does carbon fixation occur in chloroplast ?



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8. Which compound acts as CO_2 acceptor in Calvin cycle ?



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9. Name the end products of light reaction.



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10. Does the photosynthesis occur in moon light ? Why ?



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Short Answer Questions I

1. Why does the rate of photosynthesis decline in the presence of continuous light ?



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2. Why do green plants start evolving carbon dioxide instead of oxygen on a hot sunny day ?



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3. Fill in the space, left blank in the given table to bring the difference between C_3 and C_4 plants :

S.No.	Characteristics	C_3 plants	C_4 plants
1.	Cell type	mesophyll	...(a)... and mesophyll
2.	CO_2 acceptor	...(b)...	Phosphoenol pyruvate (PEP)
3.	First CO_2 fixation product	3-PGA	...(c)...
4.	Optimum temperature	...(d)...	30° C to 45° C



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4. State two functions of accessory pigments, found in thylakoids.



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5. Why do C_4 plants are more expensive (in energy requirement) than C_3 plants ?



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6. What is limiting factor ? State the law of limiting factors.



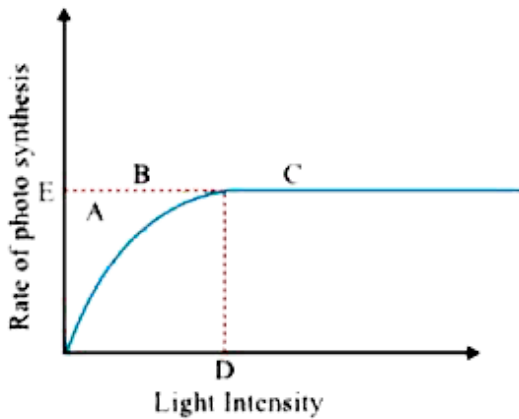
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Short Answer Questions Ii

1. The figure shows the effect of light on the rate of photosynthesis. Based on the graph, answer the following questions :

What could be the limiting factor(s) in region

A?

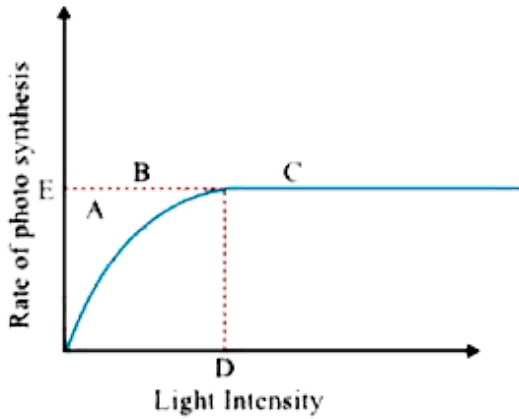


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2. The figure shows the effect of light on the rate of photosynthesis. Based on the graph, answer the following questions :

What do region C and D represent on the

curve ?



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3. What are the steps that are common to C_3 and C_4 photosynthesis ?



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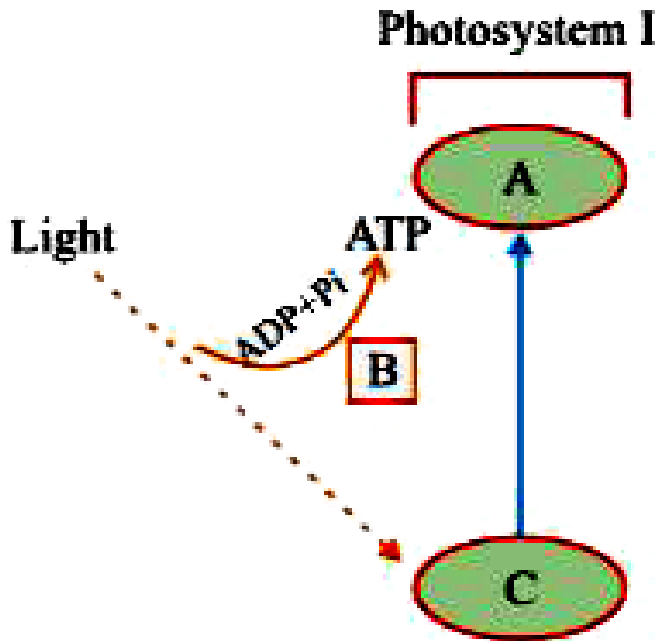
4. Two potted plants were kept in an oxygen free environment in transparent containers, one in total darkness and the other in sunlight. Which one of the two is likely to survive more ? Justify your answer by giving the reason.



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5. In the diagram shown below, label A, B and C. What type of phosphorylation is possible in

this ?



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6. Name the pigment found in tomato, carrots, chillies etc. which gives red colour to them. Is

it a photosynthetic pigment ?



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7. Chloroplast and mitochondria are believed to be semi-autonomous organelles. Justify the statement.



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8. Mention the conditions under which the C_4 plants are superior to C_3 plants.



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Long Answer Questions

1. Explain, the process, of biosynthetic phase of photosynthesis occurring in chloroplast.



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