



# BIOLOGY

## BOOKS - SUPER COMPANION 5 IN 1

### PHOTOSYNTHESIS IN HIGHER PLANTS

#### One Marks Questions And Answers

1. Give the general equation for photosynthesis.



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2. Name the active pigment involved in photosynthesis.



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3. Name the first stable intermediate compound formed during calvin cycle.



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4. What is the Red drop effect ?



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5. What is Emseron's Enhancement effect ?



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6. Define solarisation ?



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7. What is photoionization of water ?



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8. What do you regard calvin cycle as a  $C_3$  pathway ?



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9. Name the metallic ion associated with chlorophyll molecule.



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**10.** Name the energy currency of the cell ?



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**11.** State Blackmann's law of limiting factors ?



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**12.** What is the site of the dark reaction of photosynthesis ?



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**13.** What are  $C_3$  Plants ?



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**14.** Name the first stable compound produced in CAM plants.



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**15.** Name the primary  $CO_2$  acceptor in  $C_4$  plants.



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**16.** By looking at a plant externally can you tell whether a plant is  $C_3$  or  $C_4$  ? Why and how ?



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## Two Marks Questions And Answers

1. Draw a neat labelled diagram of a chloroplast ?



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2. What are the end products of light reaction of photosynthesis ?



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3. List any four differences between cyclic and non-cyclic photosynthesis.



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4. Give the schematic representation of a cyclic photo phosphorylation.



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5. Write any four differences between light and dark reactions of photosynthesis.



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6. Explain the law of limiting factors with an example.



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7. What is Kranz anatomy? Give two examples of plants with Kranz anatomy.



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8. By looking at which internal structural of plant, can you tell whether a plant is  $C_3$  or  $C_4$ ? Explain.



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9. Even though only few cells in a  $C_4$  plant carry out the biosynthesis - Calvin pathway, they are highly productive. Can you describe why?



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10. RuBisCO is an enzyme that acts both as a carboxylase and an oxygenase. Why do you think RuBisCO carries out more carboxylation in  $C_4$  plants ?



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11. Why is the colour of a leaf in the dark frequently turns yellow, or pale green ? Which pigment do you think is more stable ?



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**12.** Give comparison between the following :

$C_3$  and  $C_4$  pathways.



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**13.** Give comparison between the following :

Cyclic and non-cyclic photophosphorylation.



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14. Give comparison between the following :

Anatomy of a leaf in  $C_3$  and  $C_4$  plants.



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## Five Marks Questions And Answers

1. Write the schematic representation of non-cyclic photophosphorylation.



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2. Give the schematic representation of Calvin cycle/ $C_3$  pathway.



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