**Neha Malhotra** **R.L. Institute M: 9416974837**

**Max Time : 1 hr** **Class = 11th Biology Test Max Marks : 25**

**Topic: Photosynthesis in Higher Plants**

1. Multiple choice questions : [ 1 X 5 = 5]
2. Which metal ion is a constituent of chlorophyll?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Iron | b) Copper | c) Magnesium | d) Zinc |

1. Which range of wavelength (nm) is called photosynthetically active radiation (PAR)?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 100 – 390 | b) 390 – 430 | c) 400 – 700 | d) 760 – 1000 |

1. The correct sequence of flow of electrons in the light reaction is :

a) PS II , plastoquinone , cytochromes , PS I , ferredoxin

b) PS I , plastoquinone , cytochromes , PS II , ferredoxin

c) PS I , ferredoxin , PS II

d) PS I , plastoquinone , ferredoxin , PS II , cytochromes

1. Kranz anatomy is found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) C3 plants | b) C4 plants | c) CAM plants | d) Both (b) & (c) |

1. Who discovered the action spectrum of photosynthesis?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Engelmann | b) Sachs | c) Emerson | d) Hill |

1. Distinguish between : cyclic photophosphorylation and non-cyclic photophosphorylation. [ 2 ]
2. What is Kranz anatomy? Write a note on those plants in which this anatomy is found. [ 2 ]
3. Define : (i) Law of limiting factors (ii) Action spectrum [ 2 ]
4. What is respiration? Explain its significance. [ 2 ]
5. Describe the mechanism of “Hatch and Slack” pathway in C4 plants. [ 3 ]
6. Where does non-cyclic photophosphorylation take place ? Describe the process. Why is process referred to as non-cyclic photophosphorylation? [ 3 ]
7. RuBisCo is an enzyme that acts both as a carboxylase and oxygenase. Why do you think RuBisCo carries out more carboxylation in C4 plants? [ 3 ]
8. Suppose these were plants that had high concentration of chlorophyll b but lacked chlorophyll a. Would it carry out photosynthesis? Then, why do plants have chlorophyll b and other accessory pigments? [ 3 ]