	INDIAN SCHOOL AL WADI AL KABIR	
Class: XI	**Department: SCIENCE 2022 – 23** **SUBJECT: BIOLOGY**	**Date of submission:** **24.11.2022**
Worksheet: 10 **with answers**	**CHAPTER: PHOTOSYNTHESIS IN HIGHER PLANTS & PLANT GROWTH REGULATORS**	**Note:** **A4 FILE FORMAT**
NAME OF THE STUDENT	**CLASS & SEC:**	**ROLL NO.**

MULTIPLE CHOICE QUESTIONS

1. Identify the reaction centre of PSII
   (a) Chla 700
   (b) Chla 680
   (c) Chla 700 and 680
   (d) Chlb 680
2. Select the correct option applicable for C_3 plants
   (a) Primary CO_2 acceptor is a 5C compound, PEP
   (b) Primary CO_2 acceptor is a 3C compound, PEP
   (c) Primary CO_2 acceptor is a 5C compound, RuBP
   (d) Primary CO_2 acceptor is a 3C compound, RuBP
3. The photosynthetic pathway in C_4 plants is/are
   (a) C_4 pathway
   (b) C_3 pathway
   (c) C_3 pathway and C_4 pathway
   (d) C_3 pathway or C_4 pathway
4. Chemiosmotic synthesis of ATP is due to
   (a) Formation of high H+ concentration in stroma
   (b) Formation of high electron concentration in stroma
   (c) Formation of high H+ concentration in lumen
   (d) Formation of high electron concentration in lumen
5. The hormone responsible for apical dominance is
   (a) Auxin
   (b) GA
   (c) Cytokinin
   (d) ABA

2 MARKS QUESTIONS

6. What are the differences between the primary CO_2 acceptors in C_3 & C_4 pathways?
7. What you mean by LHC?
8. Write the importance of light reaction in photosynthesis.
9. How does Kranz anatomy favour C_4 plants?
10. Give a brief description of different factors affecting photosynthesis.
11. Which PGR is known as stress hormone? What are the different roles of this hormone in plants?
12. What is ethephon? What is its importance in agriculture?
13. Plants like *Sorghum* are photosynthetically more efficient than plants like Rice. Give reasons.

3 MARKS QUESTIONS

14. Write the differences between cyclic and non-cyclic photophosphorylation.
15. Schematically represent the 'Z' scheme of ETS in light reaction.
16. Schematically represent the Calvin cycle.
17. Where does cyclic photophosphorylation occur? Describe the process. Why is the process referred to as cyclic?
18. Write a brief note on photorespiration.
19. Give the differences between C_3 and C_4 plants.
20. Give a detailed description of the functions of the following growth regulators:
    (i) Auxin (ii) Cytokinin (iii) Gibberellins

5 MARKS QUESTIONS

21. Describe C_4 pathway and represent it schematically.
22. Write notes on

a) Kranz anatomy
b) Reaction center
c) Photolysis
d) Law of limiting factors
e) Absorption spectrum

23. With the help of a neat labeled diagram explain the chemi-osmotic hypothesis in photosynthesis.

HINTS/SOLUTION

	MULTIPLE CHOICE QUESTIONS	
1	(b)	1
2	(c)	1
3	(c)	1
4	(c)	1
5	(a)	1
	2 MARKS QUESTIONS	
6	C3 – 5carbon compound, RuBP C4 – 3 carbon compound, PEP	2
7	Light Harvesting Complex - importance	2
8	Produces assimilatory power – ATP and NADPH	2
9	Necessary for C4 pathway and thus avoids photorespiration	2
10	Light, CO_2, temperature, water	2
11	ABA, withstand stress, promotes dormancy	2
12	Ethylene, promotes fruit ripening	2
13	Sorghum is C4 plant and Rice is C3 plant. The first one is more efficient due to the absence of photorespiration	2
	3 MARKS QUESTIONS	
14	Cyclic- electron travels in a cyclic way, only PS I, ATP synthesis, stroma lamellae, not common Non – cyclic- Z scheme, both PS I and PS II, ATP and NADPH, grana thylakoid, common (any three)	3
15	Schematic representation	3
16	Schematic representation	
17	Stroma lamellae, explanation and representation	3
18	Photorespiration – due to oxygenase activity of Rubisco, synthesis of PGA and phosphoglycolate, wasteful process, release of CO_2	3
19	C3 plants and C4 plants – differences in primary carbon dioxide acceptor, kranz anatomy, temperature tolerance, photorespiration etc.	3
20	Functions of PGRs	3
	5 MARKS QUESTIONS	
21	Schematic representation and explanation	5
22	(a) Special leaf anatomy in C4 plants, around vascular bundles (b) Single Chl a molecule that forms the centre of pigment system (c) Splitting of water associated with 'Z' scheme (d) Law of limiting factors (e) Graphical representation of absorption of light by pigments	5
23	Diagram and explanation of chemi osmotic hypothesis	5

Prepared by: ***Ms. Rejitha S***	**Checked by:** **HOD - SCIENCE**