Reg. No.										

GIET UNIVERSITY, GUNUPUR – 765022

B. Sc. (Ag.) (First Semester) Examinations, March – 2023

PP-111 – Fundamentals of Crop Physiology

Time: 2 hrs Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure. **(0.5 x 10 = 5 Marks)**

a. Photosynthesis is a …….. process.
b. The unit used to express the water potential is …….
c. Mitochondria participate in the synthesis of ……..
d. Apical dominance can be controlled by treating the plant with……
e. Amount of ATP released during C3 Cycle for the synthesis of one glucose molecule is .....
f. Photosynthesis is at highest level in..... light.
g. The enzyme that catalyses carbon dioxide fixation in C4 plants is.....
h. Full form of IBA is.....
i. General chlorosis in the all leaves is the deficiency symptom of the ..... element.
j. Hormone ..... produced during water stress that brings stomatal closure.

Q. 2. Define (or) Explain the following in one or two sentences. **(1 x 5 = 5 Marks)**

a. Hypotonic
b. Water Potential
c. Passive process
d. Photosystem -I
e. Plant growth promoters

Q3. Match the following **(0.5 x 10 = 5 Marks)**

Column – A			Column – B	
(a)	Phycobillins		(i)	Active absorption
(b)	Atkins and Priestly		(ii)	Autophagy
(c)	Lysosome		(iii)	Blue pigments
(d)	Tracer		(iv)	Reclamation disease
(e)	Copper		(v)	$_{14}C$-Metabolism
(f)	Gibberellin		(vi)	Active pumping of K^+ ion
(g)	Anaerobic condition		(vii)	Seed germination
(h)	Levit		(viii)	Lactic acid
(i)	Root pressure		(ix)	C4 plants
(j)	Kranz anatomy		(x)	Guttation

Q4. Write True or False against each statement **(0.5 x 10 = 5 Marks)**

a. Chlorosis is the death of a margins or interveinal areas on older leaves.
b. When water is absorbed towards the osmotic gradient, this phenomenon is called non-osmotic absorption
c. The chemical processes of photosynthesis occurring independent of light is called *Light reaction*.
d. The avena curvature is used for bioassay of BAP.
e. Fatty acids are building blocks of phospholipids and glycolipids.
f. In Alcoholic fermentation carbon dioxide is released
g. Gibberellic acid increased the yield of sugar by increasing the length of stem in sugarcane.
h. CO_2 diffuses in the stomata during photosynthesis.
i. Natural ABA are not found in root hair.
j. Potassium is essential for synthesis of chlorophyll.

PART – B

Attempt *ANY FIVE* questions. All question carries equal marks **(6 x 5 = 30 Marks)**

5. Give details of the pathways involved in the water movement from soil to roots of plants?
6. Explain stomatal transpiration and its contribution? List out the internal factors affecting the transpiration rate?
7. List out the roles of auxin along with biosynthesis pathway in plant?
8. Describe the amount of energy generated from one molecule of glucose in the Citric acid cycle?
9. What are fatty acids? Differentiate between saturated and unsaturated fatty acids with examples?
10. Define Growth? Draw a plant growth curve and explain its stages?

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