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## GIET UNIVERSITY, GUNUPUR – 765022 B. Sc (AG)(First Semester) Examinations, June – 2021

	damentals of Crop Physiology
Time: 2 hrs	Maximum: 50 Marks
	and margin indicate marks.
Q.1. Fill in the blanks with suitable word / f	RT - A figure. (0.5 x 10 = 5 Marks)
a. For every one molecule of sugar glucose pyruvic acid are produced.	which is oxidized molecule of
b. The electrons that are added to CO2 in ph what element?	notosynthesis are provided by the oxidation of
c. Deficiency of causes the leav	es to develop a dark green colouration.
d. In photosynthesis, the carbon in CO2 is _	by addition of four
electrons to form an organic molecule (C	H2O).
e. The PGR used to initiate flowering	and synchronising fruit-set in pine apple is
f. In most situation,acts as a	n antagonist to GAs?
g. The sites of perception of light/dark durat	tion in the plants are
h. The PGR used to induce parthenocarpy in	n tomatoes is
i. Primary and secondary growth are inhibit	ted by
j. Fruit and leaf drop at early stages can be	prevented by the application of
Q. 2. Define (or) Explain the following in or	ne or two sentences. $(1 \times 5 = 5 \text{ Marks})$
<ul><li>a. Respiration quotient</li><li>b. Hill reaction</li><li>c. Gluconeogenesis</li><li>d. Photolysis</li><li>eGlyoxysome</li></ul>	
Q3. Choose the most appropriate answer f	from the following: $(0.5 \times 10 = 5 \text{ Marks})$
a. Which one of the following is used for me	easuring the rate of transpiration?
(i) Moll's experiment	(ii) Ganong's potometer
(iii) Auxanomete	(iv) Respirometer
b. In plant nutrition elements are classified a	s major or minor depending on
(i) Their availability in the soil	(ii) Their relative production in the ash obtained after burning the plants
(iii) The relative amounts required by the plants	e (iv) Their relative importance in plant growth
c. Who discovered photophosphorylation?	
(i) Arnon et. al.	(ii)Von Mayer
(iii) Clavin et.al.	(iv) Hill
d. Carbon dioxide is necessary for photosynt effectively from entering a control	thesis. The chemical used to remove this gas most apparatus is
(i) calcium oxide	(ii) distilled water
(iii) potassium hydroxide solution	(iv) sodium carbonate.

e.	Photorespiration, usually occurs in					
	(i) one cell organelle	(ii) two cell organelles				
	(iii) three cell organelles	(iv) four cell organelles				
f	Which of the following, one element has not been proved to be essential in plants					
	(i) Potassium	(ii) Sodium				
	(iii) Zinc	(iv) Iron				
g	Which of the following is not required in the synthesis of fatty acids?					
	(i) Acetyl-CoA	(ii) Biotin				
	(iii) HCO3– (CO2)	(iv) NADH				
h	The rate-limiting step in fatty acid synthesis	is.				
	(i) condensation of acetyl-CoA and malonyl-CoA.	(ii) formation of acetyl-CoA from acetate.				
	(iii) formation of malonyl-CoA from malonate and coenzyme A.	(iv) the reaction catalyzed by acetyl-CoA carboxylase.				
i	are the elements, without which, the plants will not be able to complete its life cycle.					
	(i) Fertilizers	(ii) Microelements				
	(iii) Macroelements	(iv) Essential elements				
j	is a technique where the plants are grown with their roots suspended in the air.					
	(i) Osmosis	(ii) Aerophytes				
	(iii) Aerosolization	(iv) Aeroponics				
04	l. Write True or False against each stateme	ent $(0.5 \times 10 = 5 \text{ Marks})$				

- a. Kinetin is the first naturally occurring cytokines.
- b. Growth regulators, which control plant growth and development are called photomorphogenesis.
- c. In Alcoholic fermentation carbon dioxide is released.
- d. Photosynthesis provides almost all of the energy used by living things on Earth.
- e. The avena curvature is used for bioassay of IAA.
- f. Auxin stimulates on the shaded side, stimulating greater cell elongation there.
- g. Phototropic curvature is the result of uneven distribution of auxin.
- h. Auxin hasten maturity period in juvenile conifers, gibberellins controls xylem differentiation and ABA increases the tolerance of plants to various stresses.
- i. Gibberellic acid increased the yield of sugar by increasing the length of stem in sugarcane.
- j. Natural cytokinin are not found in root hair zone.

## PART - B

## Attempt ANY FIVE questions. All question carries equal marks $(6 \times 5 = 30 \text{ Marks})$

- 5. What is common in respiration and photosynthesis? Explain.
- 6. How are the electron transport chains of respiration and photosynthesis similar?
- 7. Discuss the process in which diffusion takes place through a selective permeable membrane.
- 8. Discuss the statement "growth is measurable".
- 9. Describe transpiration opening and closing of stomata briefly.
- 10. What do you understand by the term development? Explain the sequence of development process in a flowering plant.