

(i) Printed Pages : 3

Roll No. ....

(ii) Questions : 9

Sub. Code :

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B.A./B.Sc. (General) 5<sup>th</sup> Semester

(2123)

BOTANY

Theory Paper—A : Plant Physiology—I

Time Allowed : Three Hours]

[Maximum Marks : 36

**Note :—** Attempt *five* questions in all. Question 1 is compulsory and is of 8 marks, comprising 4 MCQ & 4 fill in the blanks. Attempt 4 more questions selecting *one* each from units I to IV carrying 7 marks each.

1. A. Tick the correct answer : 4

(1) A plant cell kept in Hypertonic solution, will show :

- |                |                 |
|----------------|-----------------|
| (a) Absorption | (b) Plasmolysis |
| (c) Imbibition | (d) Endosmosis  |

(2) Which theory was proposed by Dixon & Jolly for Ascent of Sap ?

- (a) Pulsation theory
- (b) Transpiration pull theory
- (c) Imbibition theory
- (d) Root Pressure theory



(3) Enzyme Nitrogenase functions in :

(a) Amino acid synthesis (b) ATP formation

(c) Root hair formation (d) Nitrogen fixation

(4) Number of substrates converted into products/minute by Enzyme is called :

(a) Efficiency

(b) SP ratio

(c) Enzymatic rate

(d) Turn over number

B. Fill in the Blanks :

4

(1) Pressure developed in Xylem due to metabolic activities of Roots is called.....

(2) Beta Oxidation is the oxidation of.....

(3) Protein having 2 or more polypeptides is said to have..... structure.

(4) Disease Tea Yellow in tea plant is due to the deficiency of.....

### UNIT—I

2. (a) Write a short note on Transpiration, its types and its significance. 5

(b) What happens to a Plant cell when it is placed in Hypotonic and Hypertonic solution ? 2

3. (a) Show by diagram the Apoplastic & Symplastic path of water inside Root. Explain these pathways. 4

(b) Write the importance of Water to Plant Life. 3



## UNIT—II

4. (a) What is Hydroponics ? Write its types and significance. 4
- (b) Write the criteria for the essentiality of Macro & Micro nutrients. 3
5. (a) Describe the passive absorption of Minerals by Ionic exchange method. 4
- (b) Write any Six deficiency symptoms with their meaning. 3

## UNIT—III

6. (a) What is Nitrogen Fixation ? Describe Biological  $N_2$  fixation in a leguminous plant. 5
- (b) Write a note on Ammonia assimilation. 2
7. (a) Describe the process of Beta oxidation. 5
- (b) Differentiate between Saturated & Unsaturated Fatty acids. 2

## UNIT—IV

8. (a) What are Enzymes ? How these differ from Proteins ? Write their any Six Properties. 5
- (b) How enzymes are named according to new system of nomenclature. 2
9. (a) Describe Lock & Key Hypothesis and Induced Fit Hypothesis for Enzyme action. 6
- (b) Write one example each of primary & secondary Protein. 1