

(i) Printed Pages : 4]

Roll No. ....

(ii) Questions : 9]

Sub. Code : 

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Exam. Code : 

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**B.A./B.Sc. (General) 5th Semester  
Examination**

**1127**

**BOTANY**

**(Plant Physiology-I)**

**Paper : A (Theory)**

**Time : 3 Hours]**

**[Max. Marks : 36**

**Note :-** Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is compulsory.

Draw diagram where necessary.

1. (A) Multiple choice questions : Pick up the correct choice.

(i) Induced fit theory of enzyme action was given by :

- (a) Emil Fischer                      (b) Koshland  
(c) Dixon                                (d) Taylor

(ii) Stomatas of plant open due to :

- (a) Influx of  $K^+$  ions

(b) Efflux of  $K^+$  ions

(c) Influx of  $H^+$  ions

(d) Influx of  $Ca^{+}$  ions

(iii) Whiptail disease of some crucifers is due to deficiency of :

(a) Fe

(b) Mo

(c) P

(d) S

(iv) Most vitamins are :

(a) Co-enzymes

(b) Non-competitive inhibitor

(c) Co-factor

(d) None of these

(v) The swelling up of plasmolysed protoplast under influence of a hypotonic solution is called :

(a) Plasmolysis

(b) Deplasmolysis

(c) Evident plasmolysis

(d) Osmosis

(vi) When stomatas are equally distributed on both the surface of leaf, it is know as :

(a) Potato type

(b) Oat type

(c) Water lily type

(d) Potamogeton type

(B) Fill in the blanks :

- (vii) Inactive form of enzymes are called ..... .
- (viii) Abscissic acid causes stomatal ..... .
- (ix) The insoluble substance, which can imbibe a liquid without forming a solution is known as ..... .
- (x) Beside mitochondria which cell organelle is involve in  $\beta$ -oxidation of lipids ..... .
- (xi) The number of substrate molecules acted upon and converted to product by one molecule of enzyme per unit time is called ..... .
- (xii) ..... is the term to represent total amount of water present in the soil.  $1 \times 12 = 12$

### Unit-I

- 2. (a) Describe Dixon's theory of ascent of sap.
- (b) Discuss importance of transpiration. 3+3
- 3. Write notes on the following :
  - (a) Antitranspirants
  - (b) Root pressure theory 3+3

### Unit-II

- 4. What are macronutrients ? Give source, role and deficiency symptoms of phosphorus and sulphur. 6

5. Write notes on the following :

(a) Ion exchange theory

(b) Donnan equilibrium

3+3

### Unit-III

6

6. What is biological  $N_2$  fixation ? Discuss the mechanism of this process.

6

7. (a) Give the reactions catalysed by :

(i) Nitrate reductase

(ii) Nitrite reductase

(iii) Glutamin synthetase

(b) Differentiate between saturated and unsaturated fatty acids.

3+3

### Unit-IV

8. Write a note on classification of proteins.

6

9. Explain the following :

(a) Allosteric inhibition of enzyme activity

(b) Lock and key model of enzyme action

3+3