

B.A./B.Sc. (General) 5th Semester**1128****BOTANY****Paper —(Theory)-A : Plant Physiology—I****Time Allowed : Three Hours]****[Maximum Marks : 36**

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

I. (A) Pick up the correct choice from the following multiple choice questions :—

(1) Roots can absorb water by :

- (a) Passive absorption
- (b) Active absorption
- (c) Both (a) and (b)
- (d) None of these

(2) “Little leaf disease” of plants is due to deficiency of :

- (a) Sulphur
- (b) Zinc
- (c) Molybdenum
- (d) Boron.

(3) Fats are hydrolysed into glycerol and fatty acids in the presence of enzyme :

- (a) Amylase
- (b) Lipase
- (c) Ligase
- (d) Exonuclease

- (4) The enzyme "Nitrogenase" is involved in :
- (a) Oxidation of N_2
 - (b) Reduction of N_2
 - (c) Oxidation of H_2
 - (d) None of these
- (5) The number of substrate molecules converted by a molecule of the enzyme in one minute is called :
- (a) Saponification Number
 - (b) RQ
 - (c) Turn over number
 - (d) None of these
- (6) The phenomenon of destruction of tertiary and quaternary structure of proteins is called :
- (a) Saturation
 - (b) Desaturation
 - (c) Denaturation
 - (d) Dehydration.

(B) Fill in the blanks :—

- (7) _____ is a term used for symptoms produced in a plant as a result of deficiency of essential elements.
- (8) Lock and Key Hypothesis was proposed by _____.
- (9) The chemical potential of pure water at normal temperature and atmospheric pressure is _____.
- (10) The phenomenon of emitting unpleasant odour by exposed fats is called _____.
- (11) Another name of Cytochrome pump theory is _____ theory.
- (12) The process of swelling up of plasmolysed protoplast, when kept in hypotonic solution is called _____.

$$12 \times 1 = 12$$

UNIT—I

- II. Describe Cohesion—Tension theory of Ascent of sap. Also write evidences and objections of this theory. 6
- III. Write notes on any two of the following :—
- (a) Osmotic Potential
 - (b) Active Water absorption
 - (c) Significance of transpiration. 3,3

UNIT—II

- IV. What are trace elements ? Discuss the role and deficiency symptoms of any three in plants. 6
- V. Explain the following :—
- (a) Hydroponics and its importance.
 - (b) Donnan Equilibrium. 3,3

UNIT—III

- VI. What are unsaturated fatty acids ? Explain the process of β -oxidation. 6
- VII. Write notes on :—
- (a) Leghaemoglobin and its role in Nitrogen fixation.
 - (b) Transamidation. 3,3

UNIT—IV

- VIII. What are proteins ? Describe their structure and organisation in detail. 6
- IX. Discuss various factors affecting the enzyme activity. 6