Bachelor of Science (B.Sc.) Fifth Semester

B.Sc 3507 - Botany Paper-I (Plant Physiology and Biochemistry)

P. Pages : 2 **GUG/W/18/1328**

Time : Three Hours * 1 0 4 1 * Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.
2. Illustrate your answers with well-labelled diagrams.

1. Define transpiration. Discuss stomatal opening & closing mechanism by K^+-malate hypothesis. **10**

OR

Write on :

a) Role and deficiency symptoms of any two macronutrients. **5**

b) Mechanism of Biological Nitrogen fixation. **5**

2. Explain the properties and role of carbohydrates. **10**

OR

Write on :

a) Chemical structure of amino acids. **5**

b) Nomenclature of Enzyme (IUB system). **5**

3. Write short notes on :

a) Osmosis. **2½**

b) Trace elements **2½**

c) Uses of fatty acid. **2½**

d) Peptide bond. **2½**

OR

e) Munch hypothesis. **2½**

f) Donnon equilibrium theory. **2½**

g) Sterols. **2½**

h) Primary structure of protein. **2½**

4. Write short notes on :

a) Water potential. **2½**

b) Carrier concept. **2½**

c) Uses of oil. **2½**

d) Enzyme substrate complex theory. **2½**

OR

e) Diffusion. **2½**

f) Sources of nitrogen to plants. **2½**

g) Uses of lipids. **2½**

h) Lock and key model. **2½**

5. Write your answer in two or three lines only **any ten.** Diagrams are not necessary. **10**

a) Incipient plasmolysis.

b) Ascent of sap.

c) Hydathode.

d) Micronutrients.

e) Chlorosis.

f) Nitrate reductase.

g) Aldoses.

h) Starch.

i) Glycerol.

j) Holoenzyme.

k) Active site.

l) Cofactor.

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