**OR**

(t) Water stress. 4

(u) Phototropic movements. 4

(v) Role of phytochrome. 4

6. Explain the following :—

(w) Water as ecological factor. 4

(x) Morphological adaptions in xerophytes. 4

(y) Soil biota. 4

**OR**

(a) Light as an ecological factor. 4

(b) Anatomical adaptions in hydrophytes. 4

(c) Soil profile. 4

7. Explain structure and functions of pond ecosystem. 12

**OR**

Explain :—

(d) Xerosere. 6

(e) Frequency and density. 6





Fifth Semester B. Sc. (Part – III) Examination

**BOTANY**

(Plant Physiology and Ecology)

P. Pages : 4

Time : Three Hours ] [ Max. Marks : 80

**Note :** (1) There are **Seven** questions in all.
(2) Q.**One** is compulsory and carries **Eight** marks.
(3) Q.**Two** to **Seven** carry equal marks.
(4) Draw well labelled diagram wherever necessary.

1. (A) Fill in the blanks.

(i) Highest rate of transpiration takes place through —— of the leaves. $\frac{1}{2}$

(ii) —— is photosynthetic cell organelles. $\frac{1}{2}$

(iii) The percentage of Nitrogen in atmosphere is approximately ——. $\frac{1}{2}$

(iv) **Hydrilla** shows —— adaptation. $\frac{1}{2}$

(B) Choose correct alternative (MCQ)

(v) Green plant are ——

(a) Producers (b) Primary consumers

(c) Secondary consumers (d) Decomposers $\frac{1}{2}$

(vi) Avena coleoptile test was conducted by

(a) Darwin (b) N. Smit

(c) Paal (d) F.W. Went $\frac{1}{2}$

(viii) Photolysis of water is associated with

(a) PS I (b) PS II

(c) Cyt.b (d) Quinone $\frac{1}{2}$

(viii) Process of water exudation through hydathodes is called

(a) Guttation (b) Transpiration

(c) Excretion (d) Hydrolysis $\frac{1}{2}$

(C) Answer in **one** sentence.

(ix) What is kranz anatomy ? 1

(x) Define anti transpirants ? 1

(xi) What is pedogenesis ? 1

(xii) Define photoperiodism. 1

2. Explain the following :—

(a) Active absorption of water. 4

(b) Diffusion. 4

(c) Ion exchange theory. 4

**OR**

(d) Stomatal movements. 4

(e) Plasmolysis. 4

(f) Transpiration pull theory. 4



3. Give detail account of Calvin cycle. 12

**OR**

Explain :—

(i) Respiratory quotient. 6

(j) Electron transport chain in aerobic respiration. 6

4. Explain the following :—

(k) Physiological role of Gibberellins. 4

(l) Sources of Nitrogen to plants. 4

(m) Physiology of abscission. 4

**OR**

(n) Role of ethylene. 4

(o) Phases of growth. 4

(p) Senescence. 4

5. Explain the following :—

(q) Seismonastic movements. 4

(r) Short day plants. 4

(s) Significance of vernalization. 4