Your Roll No. ....

1296   **A**

B.Sc. (Hons.)/I

BOTANY—Paper I

(Introduction to the Plant World and Phycology)

(Admissions of 2004 and onwards)

Time : 3 *Hours*   *Maximum Marks* : 38

(Write your Roll No. on the top immediately

on receipt of this question paper.)

Sections A and B should be answered on separate sheets.

All parts of a question should be answered together.

Illustrate your answers with suitable labelled diagrams

wherever necessary.

SECTION-A

Attempt *two* questions in all from this Section.

Q. No. **1** is compulsory.

1. (a) Fill in the blanks :   ½ × 5 = 2½

    (i)   Lamarck's theory is popularly known as ....

    (ii)   .... is a symbiotic nitrogen fixing bacterium.

    (iii)   Quaternary and Tertiary periods are included under the .... Era of Geological Time Scale.

    (iv)   .... proposed the endosymbiotic hypothesis.

    (v)   In the five kingdom classification *Rhizopus* is included under the kingdom ....

(b) Match the terms given in column **A** with those in column **B** : ½ × 5 = 2½

Column A	Column B
(i) Tuber	*Opuntia*
(ii) Tendril	Potato
(iii) Tuberous root	*Pandanus*
(iv) Phylloclade	Sweet potato
(v) Stilt root	pea

(c) Give the botanical name and family for each of the following : 1 × 3 = 3

   (i) a fibre-yielding plant

   (ii) a non-alcoholic beverage-yielding plant

   (iii) a sugar-yielding plant

2. (a) Briefly discuss the salient features of Darwin's Theory of Evolution. 3

   (b) Differentiate between prokaryotes and eukaryotes. 2

3. (a) Describe the Stanley Miller experiment in Origin of Life. 2½

   (b) What are fossils ? How is a compression fossil formed ? 2½

OR

What is alternation of generations ? Explain its significance.

SECTION-B

Answer *three* questions in all.

Q. No. **4** is compulsory.

4. (a) Fill in the blanks :   (½ × 6 = 3)

   (i) Autocolonies are formed in the genus ....

   (ii) Brown colour of Phaeophyta is chiefly due
        to ....

   (iii) Diplodiplohaplontic life cycle is seen in
         genus ....

   (iv) Phycobilisomes ae found on the surface of ....

   (v) The colour of red sea is due to the alga ....

   (vi) Fritsch classified the algae into .... classes.

   (b) Match the terms given in column **A** with those in
       column **B** :   ½ × 6 = 3

Column A	Column B
(i) Pseudo Vacuole	Phaeophyta
(ii) Floridean starch	*Volvox*
(iii) Fucosan vesicles	Cyanophyta
(iv) Dinoflagellates	*Vaucheria*
(v) Plakea stage	Rhodophyta
(vi) Coenocytic filament	Condensed Chromosomes

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(c) Write true/false against the following statements :

½ × 6 = 3

(i) *Prochloron* is a prokaryote with Chlorophyll *a* and *b*.

(ii) Kelps are members of Rhodophyta.

(iii) Flagella are present in all the divisions of the algae.

(iv) Calcareous algae have deposition of Algin on their surface.

(v) *Cephaleuros* is a parasitic alga found on tea leaves.

(vi) *Vaucheria* shows monopodial branching.

5. Write short notes on any *four* of the following :

2 × 4 = 8

(i) Chromatic adaptation

(ii) Trichoblast

(iii) Nannandrous species

(iv) Role of algae in industry

(v) Structure of primary lateral in *Chara*

(vi) Heterotrichous habit in *Coleochaete*.

6. Differentiate between any *four* of the following :

2 × 4 = 8

(i) Isogamy and Oogamy

(ii) Unilocular and plurilocular sporangia

(iii) Gynandrosporous and Idioandrosporous species

(iv) Male and female conceptacle of *Fucus*

(v) Oospore and Oosphere

(vi) Isomorphic and heteromorphic alternation of generations.

7. (a) Explain the evolution of sex in *Chlamydomonas*.   3

(b) What are Diatoms? Comment on their significance. 2

(c) Describe the process of formation of daughter colonies in *Volvox*.   3