

2013

M.Sc.

1st Semester Examination

BOTANY

PAPER—BOT-101

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Use separate answerscripts for each unit.

Unit—I

(Phycology)

(Marks : 20)

1. Answer any four questions from the following : 1X4
 - (a) What is carboxysome ?
 - (b) How does phycoplast differ from phragmoplast ?
 - (c) What is the significance of pellicular strip in englenophytes ?

(Turn Over)

- (d) Mention the unique arrangement of thylakoids in Prochlorophyta.
- (e) Mention the feature of *Dunaliella* that makes it the best single cell protein.
- (f) Name an algae as a prospective source of oil.
2. Write short notes on any two of the following : 4X2
- (i) Contribution of algae in soil fertility reclamation with reference to algal genera in succession and means of reclamation.
- (ii) Nutraceuticals — algal sources, chemical nature and their utilities.
- (iii) SCP — Definition, algal sources, demerits and future approaches for improvement.
- (iv) Ultrastructural features contributing for algal identity and algal phylogenetic analysis.
3. What is single copy DNA-DNA hybridization? How is this hybridization used to understand the time of divergence between two algal taxa?

Explain with examples the activity of this parameter in understanding the divergence amongst algal taxa.

2+1+5

Or

Enlist the characteristic features of Chlorophyta. Give three reasons with brief explanations in considering the members of the division as prospective ancestors of land plants.

5+3

Unit—II**(Marks : 20)**

4. Answer any *four* questions from the following : 1X4
- (a) What are 'Leptoids'? Give an example.
 - (b) Define hyaline cell. Give an example and mention its function.
 - (c) Name one bryophyte growing in desert.
 - (d) Mention the shapes of chromosomes found in Bryophyta?
 - (e) What are the full forms of IAP and IAB?
 - (f) What do you understand by 'C₆ - C₃' in bryophytes?
 - (g) Define heteromorphic alternation of generations.
 - (h) Name one mercury tolerant bryophyte.
5. Write short notes on any *two* of the following : 4X2
- (a) Ecological roles of *Sphagnum*.
 - (b) Bryomonitoring.
 - (c) Present phylogenetic status of *Haplomitrium* and *Takakia*.
 - (d) Vegetative propagules in bryophytes.

6. Define chemical systematics. Mention the taxonomic implications of chemical constituents in bryophytes.

1+7

Or

Define biotechnology. Mention the biotechnological application of bryophytes.

2+6