

M.Sc. 1st Semester Examination, 2012

BOTANY

PAPER—BOT-101

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

Use separate answer scripts for each Unit

UNIT – I

(Phycology)

[Marks : 20]

1. Answer any *four* of the following : 1 × 4

(a) What is girdle lamella ?

(b) What is heterokont ?

- (c) Define nanoplankton.
- (d) Name a monad genus under chlorophyta.
- (e) Name the extracellular symbiont genus of prochlorophyta.
- (f) What is Chlamydomonas stage ?

2. Write short notes on any *two* of the following : 4×2

- (i) Algal source of algin, its chemical nature and commercial uses.
- (ii) Role of phytoplankton in pisciculture and green water technology.
- (iii) Phylogenetic enigma about prochlorophyta.
- (iv) Movement mechanisms of Euglenophytes.

3. What bio-molecules are effective for the study of algal phylogeny ? Give a brief account of the achievements made with such studies. Why is organellar genome significant for the study of algal phylogeny ? 8

Or

What are phycocolloids ? Describe the chemistry, properties, source and uses of any two phycocolloids.

$2 + 2 + 1 + 1 + 2$

UNIT – II

(*Bryology*)

[*Marks : 20*]

4. Answer any *four* questions : 1 × 4
- (a) What is 'pseudopodium'? Mention its function with example.
 - (b) Who discovered the genus *Takakis*? Mention the year of discovery.
 - (c) Name the world famous institute of 'Bryophyte'.
 - (d) Write the scientific name of one hepatic which has lowest chromosome number.
 - (e) Name three species of hepatics which grow in the aquatic condition.
 - (f) Who first observed 'alternation of generations' and 'sex chromosome' in liverworts?
 - (g) What is the full form of 'GABA'? Where is it present and mention its function?
5. Write short notes (any *two*) : 4 × 2
- (i) 'Bryomonitor'
 - (ii) Ecotypes in Bryophytes

(iii) Systematic position and affinities of the order Calobryales

(iv) Sex-linked chromosome in Bryophytes

(v) Biotechnological applications of Bryophytes.

6. Who proposed traditional and current systems of classification of Bryophytes. What are the basic differences between traditional and current system of classification? Discuss the traditional classification (upto family level). 1 + 2 + 5

Or

Define heterochromatin. Who first discovered heterochromatin in bryophytes? How chromosome numbers in bryophytes have been used in taxonomical studies, give details with the help of phyletic scheme (after Smith, 1978). 1 + 1 + 6