PG/IS/BOT-101/15

M.Sc. 1st Semester Examination, 2015

BOTANY

PAPER –BOT - 101(Unit - I & II)

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 script for each Unit

UNIT–I

(*Phycology*)

[*Marks* : 20]

1. Answer any *four* questions from the following : 1 × 4

(*a*) Mention a unique feature of Heterokontophyta.

(*b*) What is the significance of nucleomorph ?

(*c*) What is the use of alginic acid in preparing medicine ?

(*d*) Cite a case of parallelism in algae.

(*e*) Mention a demerit of algal SCP.

(*f*) How do non-heterocystons algae contribute for ameliorating soil fertility ?

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

(*i*) Name two algal pheromones with the respective taxonomic group of occurrence. What does the "Q value" signify in respect of pheromone ? Give a brief account of chemo-thigmoklino-kinesis of pheromone action. $1 + 1 + 2$

(*ii*) Mention the basic properties of a feed required to be ideally suited for fish. How does green water technique help pisciculture ? $2 + 2$

(*iii*) Name four ultrastructural features used in algal taxonomy. Elaborate the contribution of any one of these features in phylogenetic study of algae. $2 + 2$

(*iv*) What are the chemical constituents of agar-agar ? How can the gelling property of agar be improved ? 2 + 2

3. Illustrate the salient features of prochlorophyta. Contrast this division with cyanophyta in respect of two features. Explain with reason the enigmatic phylogenetic position of Prochlorophyta. 3 + 1 + 4

Or

State the basic principle of single copy DNA-DNA hybridization used in determining the relation between algal taxa. Highlight the major features of evolution in members of chlorophyta. 3 + 5

UNIT–II

(*Bryology*)

[*Marks* : 20]

4. Answer *any four* questions from the following : 1 × 4

(*a*) What are Hydroids and Leptoids ? Mention its function.

(*b*) Name two liverworts which have simplest gametophyte and sporophyte respectively.

(*c*) Name one bryophyte which has no rhizoids.

(*d*) What are hyaline cells ? Mention its function and where is it present.

(*e*) What is pseudopodium ? Mention its function and where is it present.

(*f*) Is *Sphagnum* a true moss ? Justify it.

(*g*) Name two bryophytes which have highest and lowest chromosome number (n = minimum; n = maximum) respectively.

(*h*) Name two *sphagnum* species which are strictly aquatic.

(*i*) Name two bryophytes which have Lignin.

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

(*i*) Anthocyanins and Proanthocyanins in bryophytes

(*ii*) Mention two important biotechnological applications in bryophytes

(*iii*) Phylogenetic and systematic status of Calobryales

(*iv*) Why is sphagnales often called as synthetic group ?

6. Define site indicators. Why Bryophytes are considered as excellent site indicators ? Mention the site indicating characters of bryophytes. How many types of bryophytes are there which act as environmental pollution indicators ? 1 + 2 + 2 + 2 + 1

Or

What are the basic differences between traditional and current system of classification ? Who first introduced the traditional and current system of classification and in which year ? Write the recent system of classification with merits and demerits. 2 + 2 + 3 + 1