

M.Sc. 1st Semester Examination, 2024

BOTANY

(*Phycology*)

PAPER – BOT-102

Full Marks : 25

Time : 1 hour

Answer all questions

The figures in the right hand margin indicate marks

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

GROUP – A

Answer any two of the following : 2 × 2

1. Explain how both morphological and molecular data are used to classify algae.

(*Turn Over*)

(2)

2. Define the key structural features of a heterocyst that enable it to carry out nitrogen fixation.
3. Describe the key characteristics that distinguish Xanthophyceae from other algal groups.
4. How are algae utilized in sustainable pisciculture practices ?

GROUP – B

Answer any **two** of the following : 4 × 2

5. Why are harmful algal blooms a concern ?
How can we mitigate the risks associated with algal toxins ?
6. Elucidate the role of pheromones in the reproductive strategies of algae, providing specific examples.

(3)

7. Discuss the evidence that supports the hypothesis that land plants evolved from a lineage of green algae.
8. Briefly describe the mechanism of osmoregulation in algal cells. What are the challenges they face in different aquatic environments ?

GROUP – C

Answer any **one** of the following : 8 × 1

9. Describe the salient features of Cyanoprokaryotes. Compare its characteristics with Glaucophyta, and Rhodophyta.
10. Discuss the potentiality of algae as a renewable source of hydrocarbons, highlighting its production methods and potential applications as biofuels.

[Internal Assessment – 5 Marks]

