GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Biological and Life sciences

Bachelor of Science Honours in Microbiology
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem II - P1UC203B - Phycology and Mycology

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Provide two fundamental characteristics shared by most algae.	K2	(2)
2)	Name one essential pigment found in Chlorophyceae and describe its role in photosynthesis. Additionally, briefly mention a common habitat where Chlorophyceae can thrive.	K1	(3)
3)	Explain the life cycle of Volvox, emphasizing its distinctive reproductive features. Highlight the alternation of generations and the significance of both asexual and sexual reproduction in the life cycle.	K2	(4)
4)	Compare and contrast the life cycle of Volvox with that of a unicellular green alga, emphasizing key differences in reproductive strategies. Discuss the evolutionary advantages of the complex life cycle observed in Volvox.	K2	(6)
5)	Explain the general characteristics of Rhodophyceae, emphasizing features such as pigments, cell structure, and ecological adaptations. Provide examples to illustrate these characteristics.	K3	(6)
6)	Discuss the ecological significance of diatoms with a pinnate structure, considering their interactions with the environment and other organisms. Explain how the pinnate morphology influences their adaptation to different habitats.	K3	(9)
7)	Discuss the evolutionary significance of the transition from unicellular to multicellular forms in algae. Provide examples of multicellular algae and elucidate the advantages associated with their increased complexity.	K4	(8)

8) Examine the pivotal role of algae as primary producers in aquatic ecosystems. Discuss how algae contribute to the food web, nutrient cycling, and overall ecosystem health. Provide specific examples of algae species and their ecological significance. Evaluate the potential consequences of disturbances to algal populations on aquatic ecosystems. K4 (12)

OR

Explore the role of algae-derived compounds in food additives and supplements. Discuss the extraction and utilization of algae-based ingredients, such as carrageenan or omega-3 fatty acids, in enhancing the texture, flavor, and nutritional profile of various food products. Evaluate the environmental and health implications of widespread use and propose measures to ensure sustainable practices in the algae-based food industry. K4 (12)