

The Assam Royal Global University, Guwahati
ROYAL SCHOOL OF LIFE SCIENCES
B.SC. BOTANY 1ST SEMESTER
Semester End Examination, February 2022
Course Title : MICROBIOLOGY & PHYCOLOGY
Course Code : BOT142C101

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given.

The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all questions**. (Maximum word limit 50) **2 x 8**
- a. Mention the differences between heterotrophic and autotrophic nutrition with examples.
 - b. How does cell division in prokaryotes differ from eukaryotes?
 - c. Define a bacterial endospore with illustration.
 - d. Mention two important features of Archaea.
 - e. Mention 1 example each of epiphytic and epizoic algae.
 - f. Who is known as the father of Indian phycology? On which group of algae did the person work upon?
 - g. Mention 2 important characters of Xanthophyceae.
 - h. What is clump formation in *Ectocarpus*?

Section – B

2. Attempt **any one** of the following: **12 x 1**
- a. Discuss the importance of bacteria with special reference to agriculture and industry.
 - b. Discuss the role of bacteria and virus in causing diseases giving special emphasis to the physiological changes taking place.
3. Attempt **any two** of the following: **7 x 2**
- a. How does transfer of genetic information occur in Prokaryotes?
 - b. Describe the process of transduction in bacteria.
 - c. Describe with illustration the growth of Bacteria in a culture medium.
4. Attempt **any two** of the following: **7 x 2**
- a. Write short note on the pigmentation found in Algae.
 - b. Write briefly about the remarkable habitats of algae.
 - c. Briefly discuss with examples the methods of vegetative reproduction in algae.
5. Attempt **any two** of the following: **7 x 2**
- a. Explain with illustration the reproduction in *Ectocarpus* giving emphasis to unilocular and plurilocular sporangia.
 - b. Illustrate and describe the life cycle of *Polysiphonia*.
 - c. Describe the cell structure and life cycle of *Nostoc*.