

B.Sc. 1st Semester (Honours) Examination, 2022 (CBCS)

Subject : Botany

Course : CC-1

Microbiology and Phycology

Time : 2 Hours

Full Marks : 40

*The figures in the margin indicate full marks
Candidates are required to give their answers in
their own words as far as practicable*

Answer all questions.

1. Answer *any five* of the following questions: 2×5=10
 - (a) Define chemolithoautotroph. Cite an example.
 - (b) What is Poly Hydroxy Butyrate (PHB)? State its one function.
 - (c) Distinguish between viroid and prion.
 - (d) What do you mean by heterotrichous habit? Give an example.
 - (e) What is spermocarp?
 - (f) What is phycocolloid?
 - (g) What do you mean by *Gongrosira* stage?
 - (h) What is heterocyst? State its significance.

2. Answer *any two* of the following questions: 5×2=10
 - (a) Draw and describe the structure of flagellum of Gram (-)ve bacteria. How does it differ from that of Gram (+)ve bacteria? 4+1
 - (b) Discuss the structure of TMV with proper diagram. Write symmetrical difference between TMV and T₂ phages. 4+1
 - (c) Give a brief account of sexual reproduction of a macrandrous species of *Oedogonium*.
 - (d) Briefly discuss the structure of Nucule and Globule of *Chara*. 2½+2½

3. Answer *any two* of the following: 10×2=20
 - (a) Define and mention the different types of plasmids. How does it differ from episome? Describe briefly the conjugation process in bacteria. 3+1+6
 - (b) Schematically represent the lytic cycle of a phage virus. Draw and describe the formation of endospore in bacteria. 4+6
 - (c) Give a brief account of ultrastructure of a Cyanophycean cell. Write two bacterial features of blue-green algae. What is cyanophage? 7+2+1
 - (d) What is triphasic life cycle? Describe with labelled diagram the post fertilization changes in *Polysiphonia*. Write a note on tetrasporophyte of *Polysiphonia* sp. 1+7+2