



বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

B.Sc. Honours Examination 2021

(CBCS)

1st Semester

BOTANY

PAPER—C1T & C1P

PHYCOLOGY AND MICROBIOLOGY

Full Marks : 60

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

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

THEORY : C1T

Group – A

Answer any *three* questions.

3×12

1. Write down the differences between the cell wall of Gram positive and Gram negative bacteria. Describe with labelled diagram the flagellar structure of bacteria. Mention the characters of Mycoplasma.

4+(3+2)+3

2. Answer in brief any *three* of the following : 3×4
- (a) Lytic cycle of bacteria.
- (b) Classification of bacteria by their shape.
- (c) Role of virus in vaccine production.
- (d) Bacterial transformation.
3. Discuss the different modes of bacterial nutrition. Distinguish between archaebacteria and true bacteria. Mention the important characters of prions. Write about the structure of TMV. 4+3+2+3
4. Write down the contribution of MOP Iyengar in the context of phycology. Mention the important characters of Rhodophyta. Discuss the different types of thallus organisation in algae with proper diagram. 3+4+5
5. Write note on any *three* questions : 3×4
- (a) Asexual reproduction of *Ectocarpus*.
- (b) Algal classification by Lee.
- (c) Sexual reproduction of *Chlamydomonas*.
- (d) Role of algae in agriculture.
6. What is Gaidukov phenomenon? Write down the structure of heterocyst in algae. Mention the criteria for algal classification. Write down the sexual reproduction of *Chara* with proper diagram. 2+3+2+5

Group – B

Answer any *two* questions. 2×2

7. What is sigmoid growth curve of bacteria?
8. Why bacterial endospores are not considered as true spores?

9. What is pamella stage?

10. What is gongrosira stage?

PRACTICAL : C1P

Answer any *one* question. 1×15

1. Write down the procedure of Gram Staining. How is this method used to differentiate Gram-positive and Gram-negative bacteria? 10+5
2. Describe the lytic cycle using suitable diagram. Schematically represent the process of bacterial conjugation. 8+7
3. Briefly describe with suitable diagram the vegetative and reproductive structures of *Oedogonium*. 15

Answer any *one* question. 1×5

4. Draw and label the structure of T-phage.
 5. State the characteristics and Gram staining nature of bacteria present in curd sample.
 6. Describe the general features and ultra-structures of *Nostoc*.
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