



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours Part-I Examination, 2019

BOTANY

PAPER-BOTA-I

Time Allotted: 4 Hours

Full Marks: 100

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

GROUP-A

[Marks: 25]

1. Answer the following questions in few words:
 - (a) In which class of algae motile gametes are absent? 1
 - (b) What is coenozoospore? 2
 - (c) Why cyanophycean members are called as cyanobacteria? 2

2. Answer any *two* questions from the following: 5×2 = 10
 - (a) Draw and describe the ultrastructure of flagella in algae. 5
 - (b) Mention the salient features of chlorophyceae with examples. 5
 - (c) Write a short note on the vegetative structure of Bacillariophyceae. 5
 - (d) Write a short note on the role of algae as food and fodder. 5

3. Describe the process of sexual reproduction in *Polysiphonia*. Elucidate the post-fertilization changes found in this genus. 6+4

OR

Mention the salient features of Xanthophyceae. Draw and describe the reproduction of *Vaucheria*. 4+6

GROUP-B

[Marks: 25]

4. Answer the following questions:
 - (a) Name one dye yielding lichen. 1
 - (b) What is dolipore septum? Where is it found? 2
 - (c) What do you mean by coenocytic fungi? Give one example. 2

5. Answer any *two* questions from the following: 5×2 = 10
 - (a) Mention the characteristic features of oomycota. 5
 - (b) Discuss the role of mycorrhiza in agriculture and forestry. 5
 - (c) Describe the life cycle of *Rhizopus* in brief. 5
 - (d) Mention the fungal sources and uses of Citric acid and Griseofulvin. 5

6. With neat labelled sketches describe the life cycle of *Agaricus* sp. 5+5
- OR**
- What is parasexuality? Mention different stages of parasexuality in fungi. State its significance. 2+6+2

GROUP-C
[Marks: 25]

7. Answer the following questions:
- (a) What is capsomere? 1
 - (b) Name two endospore forming bacteria. 2
 - (c) Name two beneficial bacteria and mention their importances. 2
8. Answer any *two* questions from the following: 5×2 = 10
- (a) Write a note on the cell wall of Gram negative bacteria. 5
 - (b) Draw and describe the structure of TMV. 5
 - (c) Write down the name of five human pathogenic bacteria and mention the respective diseases caused by them. 5
 - (d) Name the microbial sources and uses of bacitracin and chloramphenicol. $2\frac{1}{2} + 2\frac{1}{2}$
9. With labelled sketches describe the mechanism of transformation in bacteria. 7+3
Mention the differences between transformation, transduction and conjugation.
- OR**
- Define bacterial growth. Graphically represent the different phases of bacterial growth and mention their importances. 2+8

GROUP-D
[Marks: 25]

10. Answer the following questions:
- (a) What is necrotroph? 1
 - (b) Define pathotoxin with suitable example. 2
 - (c) What is phytoalexin? Give an example. 2
11. Answer any *two* questions from the following: 5×2 = 10
- (a) Write a short note on quarantine. 5
 - (b) Differentiate between monocyclic and polycyclic disease cycle. 5
 - (c) Discuss a critical note on induced systemic resistance. 5
 - (d) Mention the causal organism and control measures of tungro virus disease of rice. 1+4
12. Name the causal organism of black stem rust of wheat. What are the symptoms of the disease? Describe the disease cycle and mention the control measures of the disease. 1+3+3+3
- OR**
- What is biological control? Describe different methods of biological control of plant diseases. What is systemic fungicide? Give an example. 2+5+2+1

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