



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours, 1st Semester Examination, 2018

BOEACOR011-BOTANY (CC1)

PHYSIOLOGY AND MICROBIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable*

1. Answer *all* questions briefly from the following: 1×5 = 5
- (a) Name one Gram positive bacterium.
 - (b) Mention the principal source of bacterial amylase.
 - (c) What is plurilocular sporangium?
 - (d) What is phototroph?
 - (e) Name the principal reserve food materials found in Cyanophyceae.

2. Answer any *five* questions from the following: 3×5 = 15
(At least *two* questions from each group)

GROUP-A

- (a) Describe the three domain system of classification. 3
- (b) Briefly describe the cell wall structure of a Gram negative bacterium. 3
- (c) Discuss the characteristic features of prion and viroid. 1.5+1.5
- (d) Draw, label and describe the different phases of bacterial growth curve. 1+2

GROUP-B

- (e) Discuss the salient features of the class Rhodophyceae. 3
- (f) Write a short note on algal biofertilizer. 3
- (g) Discuss the asexual reproductive structures in *Ectocarpus* sp. 3
- (h) Draw and label the male reproductive structure in *Chara* sp. 3

3. Answer any *four* questions from the following
(At least two questions from each group)

GROUP-A

- (a) Draw and describe the process of generalized transduction in bacteria.
(b) Mention the economic importance of bacteria with reference to their role in agriculture and industry.
(c) Draw and describe the different steps of lytic cycle in a bacteriophage.

2+4 = 20

2.5+2.5

GROUP-B

- (d) With suitable diagram discuss the cell structure of Cyanophyceae.
(e) What is coenobium? With proper diagram give the asexual mode of reproduction in *Volvox* sp.
(f) With neat labelled sketches, discuss the process of sexual reproduction in *Vaucheria* sp.

1+4

1+4

2+3