

2023

(Session : 2023-27)

(Paper ID : 11050)

Time : 3 hours

Full Marks : 70

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

The figures in the margin indicate full marks.

Answer from all the Parts as directed.

Part – A

(Objective Type Questions)

1. Choose the correct answer from the options given to each question : 2×10 = 20

(a) Which of the following is a red alga ?

- (i) Volvox
- (ii) Chara
- (iii) Oedogonium
- (iv) Batrachospermum

- (b) Which of the following combination of chlorophylls is present in chlorophyceae ?
- (i) Chl a & b (ii) Chl a & c
(iii) Chl a & d (iv) Chl b & c
- (c) Nucule and globule can be observed in :
- (i) **Volvox**
(ii) **Chara**
(iii) **Ectocarpus**
(iv) **Batrachospermum**
- (d) Which of the following algae can be used as food ?
- (i) **Laminaria** (ii) **Sargassum**
(iii) **Porphyra** (iv) **All of these**
- (e) Heterocyst is present in :
- (i) **Volvox** (ii) **Nostoc**
(iii) **Oedogonium** (iv) **Ectocarpus**
- (f) The protein coat that encloses the viral nucleic acid is called :
- (i) **Capsid** (ii) **Capsule**
(iii) **Plasmid** (iv) **Plasmalemma**
- (g) Spherical bacteria are known as :
- (i) **Bacilli**

- (ii) Spirillum
 - (iii) Cocci
 - (iv) Vibrio
- (h) Bacteria without flagella are called :
- (i) Atrichous (ii) Monotrichous
 - (iii) Amphitrichous (iv) Peritrichous
- (i) Which of the genetic recombination mechanism in bacteria requires physical contact between two bacterial cells ?
- (i) Transformation (ii) Transduction
 - (iii) Conjugation (iv) Transfection
- (j) Ribosomes present in bacteria are :
- (i) 50 S (ii) 60 S
 - (iii) 70 S (iv) 80 S

Part – B

(Short-answer Type Questions)

2. Write short notes on any four of the following:

5×4 = 20

- (a) Coenobium
- (b) Nostoc
- (c) TMV

- (d) Economic importance of viruses
- (e) Mycoplasma
- (f) Archaeobacteria

Part – C

(Long-answer Type Questions)

Answer any **three** questions of the following :

10×3 = 30

3. Describe the life-cycle of **Volvox** or **Vaucheria**.
4. Discuss the range of thallus organization found in algae.
5. Describe the lytic and lysogenic cycle of bacteriophage.
6. Give an account of economic importance of bacteria.
7. Describe the different mechanisms of genetic recombination in bacteria.

