

This question paper contains 4 printed pages]

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S. No. of Question Paper : 7776

Unique Paper Code : 2161101

F-1

Name of the Paper : Phycology and Microbiology [DC-1.1]

Name of the Course : Bachelor with Honours

Semester : I

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

All parts of a question must be attempted together.

Illustrate your answers with suitable diagrams wherever necessary.

Attempt *Five* questions in all,

including question No. 1 which is compulsory.

1. (a) Fill in the blanks :

5×1=5

(i) The DNA of a temperate phage which becomes incorporated into the host DNA is called

(ii) A Gram-negative bacterial cell with the peptidoglycan removed, leaving it devoid of rigidity is called

(iii) are the granules on the surface of the thylakoids in cyanophyta and rhodophyta which contain phycobilins.

P.T.O.

(iv) is secreted by the female gamete in *Ectocarpus*.

(v) is a branched filamentous alga.

(b) Define any *five* of the following giving suitable examples :

5×1=5

(i) Hormogonia

(ii) Aplanospores

(iii) Chromatophore

(iv) Transduction

(v) Virion

(vi) Heterocyst.

(c) Match the terms given in Column A with those in Column B :

5×1=5

Column A

Column B

(i) Gongrosira stage

(1) *Chlamydomonas*

(ii) Palmella stage

(2) *Polysiphonia*

(iii) Cap cells

(3) *Ectocarpus*

(iv) Isomorphic alternation of generation

(4) *Vaucheria*

(v) Gonimoblast filaments

(5) *Oedogonium*

2. (a) Differentiate between any *six* of the following : 6×2=12

(i) Conceptacle and Receptacle

(ii) Androspore and Antherozoid

(iii) Nucule and Carpogonium

(iv) Unilocular and Plurilocular sporangium

(v) Paraphysis and Periphysis

(vi) Eye spot and Receptive spot

(vii) L-form and Mycoplasma

(viii) Contractile vacuole and Gas vacuole.

(b) Comment on the cell wall composition of bacteria. 3

3. Write short notes on any *three* of the following : 3×5=15

(i) Sexual reproduction in *Vaucheria*

(ii) Carposporophyte

(iii) Role of bacteria in agriculture

(iv) Tobacco Mosaic Virus.

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4. (a) Compare Chlorophyceae, Xanthophyceae, Phaeophyceae and Rhodophyceae on the basis of cell wall composition, pigments, reserve food material and flagellated structures. 10
- (b) What is Neo-Darwinism ? In what ways is it an improvement over Darwinism ? 5
5. Draw neat, well-labelled diagrams of the following : 3×5=15
- (i) Sex organs of *Chara*
- (ii) V.S. male conceptacle of *Fucus*
- (iii) T₂ Bacteriophage.
6. (a) Compare 5-kingdom system of classification with 6-kingdom system. 5
- (b) Discuss the significance of chromatic adaptations in red algae. 5
- (c) Discuss the role of algae in industry. 5
7. (a) Why are blue-green algae called Cyanobacteria ? Are they more closely related to bacteria or other algae ? 5
- (b) Compare diphasic and triphasic life cycles taking *Ectocarpus* and *Polysiphonia* as representative examples. 5
- (c) Describe different types of sexual reproduction in *Chlamydomonas*. 5