

This question paper contains 4+1 printed pages]

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S. No. of Question Paper : 5941

Unique Paper Code : 216101

D

Name of the Paper : BTHT-101 : Biodiversity—I (Algae and Microbiology)

Name of the Course : B.Sc. (Hons.)

Semester : I

Duration : 3 Hours

Maximum Marks : 75

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

Attempt Sections A and B on separate answer sheets.

All parts of questions from Sections A and B must be attempted together.

Illustrate your answers with suitable diagrams wherever necessary.

Section A

Attempt *four* questions in all from this section including Q. No. 1 which is compulsory.

1. (a) Name an algal genus associated with the following (any *ten*) : 10×1=10
- (i) Androspore
 - (ii) Trichoblast
 - (iii) Rolling motion
 - (iv) Pit connection
 - (v) Synzoospore

P.T.O.

(vi) Rust of tea

(vii) Protonema

(viii) Trichothallic growth

(ix) Hormogonium

(x) Sperm bladder

(xi) False branching.

(b) Match the following :

4×1=4

(1) Iodine

(a) Rhodophyceae

(2) Eye spot

(b) *Laminaria*

(3) Agar agar

(c) Cyanobacteria

(4) Murein

(d) *Chlamydomonas*

2. Write short notes on any *three* of the following :

3×4=12

(a) Thallus organization of *Chara*;

(b) Alternation of generations in *Ectocarpus*;

(c) Asexual reproduction in *Volvox*;

(d) Heterocyst.

3. Draw well labelled diagrams of any *three* of the following : 3×4=12
- (a) E.M. of *Chlamydomonas* cell;
 - (b) Cystocarp of *Polysiphonia*;
 - (c) Thallus of *Coleochaete* with spermocarp;
 - (d) Vegetative filament of *Oedogonium*.
4. Differentiate between any *four* of the following : 4×3=12
- (a) Isogamy and Oogamy;
 - (b) *Palmella* stage and *Gongrosira* stage;
 - (c) Coenobium and Coenocyte;
 - (d) Chlorophyceae and Charophyceae;
 - (e) Gas vacuole and True vacuole.
5. (a) Discuss the evolutionary significance of *Prochloron*. 2
- (b) Comment on the role of various types of algae as biofertilizers. 4
- (c) Mention the important contributions of any *two* of the following : 2
- (i) F.E. Fritsch

- (ii) M.O.P. Iyengar
 - (iii) H.D. Kumar
 - (iv) T.V. Desikachary.
- (d) Discuss the morphology of *Fucus* thallus with the help of suitable diagrams. 4

Section B

6. (a) Fill in the blanks : 5×1=5
- (i) Institute of Microbial Technology is situated at
 - (ii) Viruses infecting blue green algae are called
 - (iii) Crown gall formation is caused by
 - (iv) The pigment associated with symbiotic nitrogen fixation in legumes is
 - (v) Viruses which do not cause lysis of bacterial cell are called
bacteriophages.
- (b) Define any *five* of the following : 5×1=5
- (i) Organotroph
 - (ii) Virions
 - (iii) Auxenic cultures

(iv) Prophage

(v) Retro-viruses

(vi) Bacteroids.

(c) Draw well labelled diagram of any *two* of the following :

$2 \times 2\frac{1}{2} = 5$

(i) E.M. of Endospore

(ii) Model of TMV

(iii) E.M. of Bacteriophage.

7. Write short notes on any *two* of the following :

$2 \times 5 = 10$

(a) Recombination in bacteria by conjugation and transduction;

(b) Transmission of viruses in plants;

(c) Bacterial culture techniques.