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**3 (Sem-1/CBCS) BOT HC 1**

**2022**

**BOTANY**

(Honours)

Paper : BOT-HC-1016

**(Phycology and Microbiology)**

Full Marks : 60

Time : Three hours

**The figures in the margin indicate full marks for the questions.**

1. Answer the following as directed : **(any seven)** **1×7=7**

(a) What is viroid ?

(b) What is endospore ?

(c) The virus particle which consists of nucleic core surrounded by a protein coat is called \_\_\_\_\_. *(Fill in the blank)*

**Contd.**

(d) Heterotrichous type of thallus is differentiated into a \_\_\_\_\_ system and an erect system of branches.

*(Fill in the blank)*

(e) What is diatomaceous earth ?

(f) What is coenobium ?

(g) How many antherozoids are produced by each antheridial cell in *Oedogonium* ?

(i) 1

(ii) 2

(iii) 3

(iv) 4

*(Choose the correct answer)*

(h) What are amyllum stars ?

(i) Ectocarpus shows \_\_\_\_\_ type of life cycle.

*(Fill in the blank)*

(j) Name *one* nitrogen-fixing blue-green alga.

(k) What are heterocysts ?

(l) What is 'Gram stain' ?

2. Write briefly on the following : **(any four)**

2×4=8

(a) DNA virus

- (b) Rickettsias
- (c) Reserve food materials and pigments in red algae
- (d) Trichoblast
- (e) Gonidia
- (f) Oogamous type of reproduction
- (g) Replication in virus
- (h) Structure of flagella in algae

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

- (a) General characters of *Archaeobacteria*
- (b) Role of virus in production of vaccine
- (c) Evolutionary significance of *Prochloron*
- (d) Range of thallus structure in *Chlorophyceae*
- (e) Cell division in *Oedogonium*
- (f) Economic importance of *Diatom*
- (g) Unilocular and plurilocular sporangia in *Ectocarpus*
- (h) Cell structure of *Cyanophyceae*

4. Answer the following questions : **(any three)**  
10×3=30

- (a) Describe with neat diagrams the lytic and lysogenic life cycle of bacteriophage.
- (b) Write in detail the role of bacteria in agriculture and industry.
- (c) Describe with the help of diagrams different types of sexual reproduction in bacteria.
- (d) Illustrate with labelled sketches the post-fertilization changes leading to the formation of cystocarp in *Polysiphonia*.
- (e) Write in detail an account of sexual reproduction in *Oedogonium*.
- (f) Write in detail the range of thallus organization and cell structure of *Vaucheria*.
- (g) Give a detailed account on the life cycle of *Fucus*.
- (h) What are the criteria used for classification of algae ? Write in detail the classification of algae.