

2018

## BOTANY – HONOURS

First Paper :

Full Marks : 100

*The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

## Module - I

1. Answer the following questions :

- |   |   |
|---|---|
| (a) What is 'restorative process' in Bacillariophyceae?     | 2 |
| (b) What is trichothallic growth? Where is it found?        | 2 |
| (c) What is mycophage? Give example.                        | 2 |
| (d) What is capsid? Name one virus with icosahedral capsid. | 2 |
| (e) Name one nonheterocystous cyanobacterium.               | 1 |
| (f) Name one archeabacterium.                               | 1 |

2. (a) Comment on the life cycle patterns in Algae. 5

*Or,*Briefly describe the plant body of *Chara* with neat sketches. 5

(b) Write a short note on microbial biofertilisers and their role in environmental safety. 5

*Or,*

Briefly discuss the microbial source and use of amylase and glutamic acid. 2½+2½

3. (a) What is heterocyst? Briefly describe the structure of heterocyst with suitable diagrams. Mention the role of heterocyst in nitrogen fixation. What are nif genes? 2+6+5+2

*Or,*(i) Comment on the advanced nature of sexual reproduction in *Oedogonium*. State the advanced and primitive character of Rhodophyceae. 5+5

(ii) Write a note on toxic algae and their toxins. 5

(b) (i) Types of bacterial plasmids and their uses. 5

(ii) Comment on the genetic material of bacterial cell. 5

(iii) Give an outline of industrial production of vinegar. 5

*Or,*

How is lysogeny considered as a method of bacterial reproduction? What is competence? How is it classified? Name a viral pesticide and two mycopicide. Why Bt toxin is harmful to insects?

5+(2+3)+3+2

Please Turn Over

## Module - II

4. Answer the following questions :

- |  |   |
|--|---|
| (a) What is Papulospore? Name one species where it is developed.   | 2 |
| (b) What is polycyclic disease cycle? Give example.                | 2 |
| (c) What is Plectenchyma?  | 1 |
| (d) What do you mean by heterokaryosis?                            | 2 |
| (e) Name the litmus producing Lichen.                              | 1 |
| (f) What do you mean by necrotrophy? Name one necrotrophic fungus. | 2 |

5. (a) Food value of *Pleurotus*.

5

Or,

Write a note on ecological importance of lichen. Give example of one Asco and Basidiolichen.

3+2

(b) Quarantine as plant disease management practice.

5

Or,

Distinguish between Induced systemic Resistance and Systemic Acquired Resistance. State the importance of SAR in plant disease management.

2+3

6. (a) (i) Write the fungal source and uses of:

2½+2½

Mycoprotein and Celluloses

(ii) Give a comprehensive idea of 'Degeneration of sex in fungi' with illustrations.

5

(iii) What is spawn? Discuss the process of spawn preparation and spawning method with reference to cultivation of *Pleurotus*.

1+4

Or,

(i) Discuss the salient features of types of mycorrhiza with example.

(ii) Briefly describe the ascocarp developments in *Ascobolus*.

8+7

(b) (i) What is infection? Explain the role of enzymes in penetration process of host by pathogenic fungi.

1+6

(ii) Write in brief the role of phytoalexins and pathogenesis-related (PR) proteins in biochemical defence of plants.

8

Or,

Name the causal organism of late blight of potato. Describe the symptoms, disease cycle (word diagram) and control measures of the disease. Distinguish between fungal blight and bacterial blight.

1+4+4+4+2