



## 2022/TDC/ODD/SEM/BOTSEC-301T/142

TDC (CBCS) Odd Semester Exam., 2022

BOTANY

( 3rd Semester )

Course No. : BOTSEC-301T

( Biofertilizers )

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

### UNIT—I

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

1×3=3

- (a) Define biofertilizer.
- (b) Write the different types of biofertilizers.
- (c) What is symbiosis?
- (d) Name an organism which can fix nitrogen in soil freely.



( 2 )

2. Answer any *one* of the following questions : 2

(a) Write a brief note on carrier-based inoculants.

(b) Write a note on nitrogen fixing *Rhizobia*.

3. Describe the process of isolation and multiplication of *Rhizobium*. 5

Or

Give a detailed account of actinorhizal symbiosis.

UNIT—II

4. Answer any *three* of the following questions : 1×3=3

(a) What is *Azospirillum*?

(b) Name the first discovered species of *Azotobacter*.

(c) Name the family to which *Azospirillum* belongs.

(d) Write one character of *Azotobacter*.

5. Answer any *one* of the following questions : 2

(a) Write the characteristic features of *Azotobacter*.

( 3 )

(b) Write briefly on the crop response to *Azotobacter*.

6. Describe briefly the method of isolation and mass multiplication of *Azospirillum*. 5

Or

Write a note on inoculum, maintenance and mass multiplication of *Azotobacter*.

UNIT—III

7. Answer any *three* of the following questions : 1×3=3

(a) Name one species of *Azolla* commonly found in India.

(b) Name a Cyanobacteria used in rice cultivation.

(c) Name the pigment found in Cyanobacteria.

(d) What is the full form of CRRIP?

8. Answer any *one* of the following questions : 2

(a) Explain *Azolla* and *Anabaena-Azollae* association.

(b) Write the role of *Azolla* in rice cultivation.



( 4 )

9. Give an account on economic importance of Azolla in rice cultivation. 5

Or

Discuss in detail the economic importance of Cyanobacteria.

UNIT—IV

10. Answer any *three* of the following questions : 1×3=3

- (a) What do you mean by Hartig net?
- (b) Define mycorrhiza.
- (c) What is VAM?
- (d) Give an example of phosphorus solubilizing mycorrhiza.

11. Answer any *one* of the following questions : 2

- (a) Write the role of VAM in growth and yield of crop plants.
- (b) Describe the ectomycorrhizal association.

12. Describe the isolation and inoculum production of VAM. 5

Or

Give an account on various mycorrhizal associations found in plants.

J23/218

( Continued )

( 5 )

UNIT—V

13. Answer any *three* of the following questions : 1×3=3

- (a) What is manure?
- (b) What is the scientific name of earthworm?
- (c) What is organic farming?
- (d) What do you mean by recycling and reuse?

14. Answer any *one* of the following questions : 2

- (a) Write about the field applications of green manure.
- (b) Write the advantages of vermicomposting.

15. Discuss the various methods of vermicomposting. 5

Or

Discuss the advantages and disadvantages of using green manures. Add a note on industrial wastes.  $1\frac{1}{2}+1\frac{1}{2}+2=5$

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J23—450/218

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