



**2019/TDC/ODD/SEM/  
BOTSEC-301T/129**

**TDC (CBCS) Odd Semester Exam., 2019**

**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) What is actinorhizal symbiosis?
- (b) What do you mean by mass multiplication?
- (c) Write the significance of biofertilizers.
- (d) Name one bacterium which is used as biofertilizer.



( 2 )

2. Answer any one question of the following : 2

(a) How does *Rhizobium* help in enriching soil?

(b) Write the identifying characters of *Rhizobium*.

3. (a) Write a note on the microbes used as biofertilizers. 5

Or

(b) Write the methods of isolation of *Rhizobium*.

UNIT—II

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

(a) Write the systematic position of *Azotobacter*.

(b) Give one example of gram-negative bacteria.

(c) Give one example of free-living obligate aerobe.

(d) Write the identifying characters of *Azospirillum*.

5. Answer any one question of the following : 2

(a) What is the role of *Azospirillum* in nitrogen fixation?

(b) Write a note on carrier-based inoculant.

6. (a) Write the various steps of isolation of *Azospirillum* with diagram. 5

Or

(b) Write a note on maintenance and mass multiplication of *Azotobacter*.

UNIT—III

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

(a) Give one example of cyanobacteria.

(b) What is the function of heterocyst in *Anabaena*?

(c) What do you mean by nitrogen fixation?

(d) Give one example of aquatic heterosporous fern which contains an endophytic cyanobacterium.

( 4 )



<http://www.elearninginfo.in> ( 5 )

8. Answer any *one* question of the following : 2
- (a) Write the characteristic features of blue-green algae.
- (b) Where does *Azolla* grow?

9. (a) Write the role of cyanobacteria in rice cultivation. 5
- Or
- (b) Write a brief note on *Azolla* and *Anabaena azollae* association.

#### UNIT—IV

10. Answer any *three* of the following questions : 1×3=3
- (a) What is mycorrhiza?
- (b) Give the full form of VAM.
- (c) Name one fungal family involved in ectomycorrhizal association.
- (d) What do you mean by symbiotic association?

11. Answer any *one* question of the following : 2
- (a) What is the difference between endomycorrhiza and ectomycorrhiza?
- (b) How does mycorrhiza promote plant growth?

12. (a) Give an outline of mycorrhizal influence on growth and yield of crop plants. 5

Or

- (b) Write short notes on the following : 2½+2½=5
- (i) Orchidaceous mycorrhiza
- (ii) Phosphorus nutrition in mycorrhiza

#### UNIT—V

13. Answer any *three* of the following questions : 1×3=3
- (a) What is organic farming?
- (b) What is the main source of green manure?
- (c) What do you mean by green leaf manuring?
- (d) What is vermicomposting?

14. Answer any *one* question of the following : 2
- (a) Differentiate between biodegradable and non-biodegradable wastes.
- (b) Write a short note on organic biofertilizers.

20J/1162

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( 6 )

15. (a) Write a note on recycling of biodegradable municipal and industrial wastes.

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Or

(b) Write a brief account on the methods of vermicomposting and its field application.

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