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325304

Sr. No. ~~755308~~

December 2023  
B.Sc. (Life Science) III SEMESTER  
Bio fertilizer and Bio pesticide (SEC-03)

Time: 3 Hours

Max. Marks: 75

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
  2. Answer any four questions from Part -B in detail.
  3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART -A**

- Q1 (a) What is phosphate solubilizing microorganism, quote examples? (1.5)  
(b) What is the role BIS regulatory organization? (1.5)  
(c) What is the role of *nod* and *nif* gene? (1.5)  
(d) Describe heterocyst of Cyanobacteria? (1.5)  
(e) What is the role of nodule formation? (1.5)  
(f) What is rhizosphere? (1.5)  
(g) Define antagonistic properties. (1.5)  
(h) What is synbiotic nitrogen fixation? (1.5)  
(i) Write example of algal bio fertilizers. (1.5)  
(j) What is endo-mycorrhiza? (1.5)

**PART -B**

- Q2 (a) Describe the role of *Trichoderma* sp and *Bacillus* sp as a potential bio-pesticide. (10)  
(b) Describe the process of nodule formation during nitrogen fixation. (5)
- Q3 (a) Explain the mass production of bio-fertilizers at mass scale. (5)  
(b) Define the role of free living nitrogen fixing microorganisms with suitable example. (10)
- Q4 (a) Describe the role of phosphate solubilizing microorganism in phosphate cycle. (5)  
(b) Elaborate the process for the isolation and inoculum preparation of mycorrhiza. (10)
- Q5 (a) Describe the trap culture inoculum of arbuscular mycorrhizal fungal spores? (5)  
(b) Describe the role of *Pseudomonas* sp based pesticides formulations. (10)
- Q6 (a) Differentiate between symbiotic and free living nitrogen fixations? (10)  
(b) Explain, how bio-agents based preparation helps in control of soil borne diseases? (5)

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- Q7 (a) What are the different methods used for the efficient rhizobium selection. (10)  
 (b) Discuss the different steps involved in vermicomposting. (5)

December 2023  
 B.Sc. Life Science, III SEMESTER  
 Bio Fertilizer and Bio Pesticide (SEC-03)

Max. Marks: 25

Time: 3 Hours

- Instructions:
1. It is compulsory to answer all the questions. (2 marks each) of Part - A in short.
  2. Answer any four of Part - B in detail.
  3. Different sub-parts of a question are to be attempted adjacent to each other.

PART - A

- Q1 (a) What is phosphate solubilizing microorganism, quote examples? (1.5)  
 (b) What is the role of B12 regulatory organization? (1.5)  
 (c) What is the role of nod and nif gene? (1.5)  
 (d) Describe heterocyst of Cyanobacteria? (1.5)  
 (e) What is the role of nodule formation? (1.5)  
 (f) What is rhizosphere? (1.5)  
 (g) Define antagonistic properties. (1.5)  
 (h) What is symbiotic nitrogen fixation? (1.5)  
 (i) Write example of nif bio fertilizers. (1.5)  
 (j) What is endo-mycorrhiza? (1.5)

PART - B

- Q2 (a) Describe the role of Trichoderma sp and Bacillus sp as a potential bio-pesticide. (10)  
 (b) Describe the process of nodule formation during nitrogen fixation. (2)
- Q3 (a) Explain the mass production of bio-fertilizers at mass scale. (2)  
 (b) Define the role of free living nitrogen fixing microorganisms with suitable example. (10)
- Q4 (a) Describe the role of phosphate solubilizing microorganism in phosphate cycle. (2)  
 (b) Elaborate the process for the isolation and inoculum preparation of mycorrhiza. (10)
- Q5 (a) Describe the trap culture inoculum of arbuscular mycorrhizal fungal spores? (2)  
 (b) Describe the role of Pseudomonas sp based pesticides formulations. (10)
- Q6 (a) Differentiate between symbiotic and free living nitrogen fixations? (10)  
 (b) Explain how bio-agents based preparation helps in control of soil borne diseases? (8)

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