

B Sc III Year V Semester-Question Ban**Subject: Applied Microbiology****Group: Common for Mb Bt C & Mb Bc C**

UNIT-I: Microbes in agriculture

Short questions:

1. Soil
2. Rhizosphere Effect
3. Phyllosphere Microorganisms
4. Azotobacter
5. Azospirillum
6. Frania
7. Cyanobacteria
8. Biofertilizer
9. VAM
10. Weathering

Essay questions:

1. What is Soil? Give a concise account of physical & chemical characteristics of soil?
2. Give brief account of soil particles, soil texture, soil structure , organic & inorganic fraction of soil?
3. What are Rhizosphere & Phyllosphere? Give a detailed account of various microbial activities carried in rhizosphere?
4. What are Plant growth promoting Microorganisms? Give a concise account on phosphate solubilizing microorganisms?
5. What are mycorrhizae? Describe the classificatory categories of mycorrhizae?
6. What are Biofertilizers? Give a brief account of large scale production of cyanobacterial biofertilizer?
7. Write an essay on mass production & applications of rhizobium biofertilizer?

UNIT-II: Plant diseases & Biocontrol

Short questions:

1. Concept of disease in plants
2. Tomato leaf curl
3. NPV
4. Angular leaf spot of cotton
5. Trichoderma
6. Hypertrophy
7. Rust
8. Powdery mildew
9. Disease cycle
10. Koch postulates

Essay questions:

1. Write an essay on Principles of plant disease control?
2. Give a detailed account of Biopesticides?

3. Describe in detail the mass production & applications of *Bacillus thuringiensis*?
4. What are the characteristics of trichoderma? Describe its mass production & applications?
5. What is biological control? Discuss various modes of action of biological control agents?
6. Describe Tia disease of groundnut in detail?
7. What is Necrosis? Describe any five types of necrotic symptoms?

UNIT-III: Microbial ecology

Short questions:

1. Microorganisms of soil
2. Nitrogenase
3. Alternative Nitrogenase
4. Non-symbiotic Nitrogen fixation
5. Carbon cycle
6. Sulphur cycle
7. Mutualism
8. Nif genes & nod factors

Essay questions:

1. What is biological Nitrogen fixation? Discuss various modes of biological nitrogen fixation?
2. Describe the mechanism & biochemistry of Nitrogen fixation?
3. Give a detailed account of Microorganisms of environment?
4. What do you understand by Biogeochemical cycles? Give the schematic representation of sulphur cycle?
5. Describe Nitrogen cycle in detail with schematic representation?
6. Give a concise account on Microbial interactions?

UNIT-IV: Role of microbes in environmental pollution

Short questions:

1. Potable water
2. Sewage
3. Chlorination
4. Composting
5. Membrane filter technique
6. Septic tank
7. Vermicomposting
8. Sanitary landfills
9. Air microflora
10. Sanitation of potable water

Essay questions:

1. What is water potability determination? Describe coliform test technique used to determine water potability?
2. Describe Municipal water purification process in detail?
3. What is sewage? Describe municipal treatment process of sewage treatment?
4. Give a concise account of composting & describe the process of composting in detail?
5. Define Biodegradation? Describe the outlines of biodegradation of pesticides?

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