

**SEMESTER – III**  
**MICROBIOLOGY, PHYCOLOGY, MYCOLOGY, LICHENOLOGY and PLANT PATHOLOGY**  
**Course Code: BO1341**

**I. Write a short note on the following. All questions compulsory. (10 x 01 = 10)**

1. Amylum stars
2. Diatomaceous earth
3. Cap cells
4. Rhizosphere
5. TMV
6. Algal Bloom
7. Necrosis
8. Pigments of phaeophyceae
9. Ascocarp of *Penicillium*
10. Heterocysts
11. Coenobium
12. Nucule
13. Basidiocarp
14. Crustose lichen
15. Viroid
16. Dikaryon
17. Plasmid
18. Blight
19. Conjugation
20. Peridium
21. Virions
22. Hyphospores
23. Neuromotor apparatus
24. Coprophilous fungi
25. Dolipore septa
26. Ejection
27. Retrovirus
28. Mycoplasmas
29. Heterothallism
30. Rust
31. Mesosomes
32. PPLOs
33. Red tide
34. Pyrenoids
35. Globule
36. Coenocytic condition
37. Mycelium

38. Hormogonia
39. Gongrosira stage
40. Cyphellae
41. Episomes
42. Differentiate zoospores and zygozoospores
43. Prions

**II. Answer any eight (8 x 2 = 16 marks)**

1. What is the ecological importance of lichens?
2. What is a dolipore septum?
3. Name different types of asexual spores in Rhodophycean algae.
4. What is the function of Pili?
5. Name two bacteria associated with antibiotic production.
6. Name two phycobillin's present in algae.
7. Write the composition of Bordeaux mixture.
8. Describe the sexual reproduction and life cycle of *Peziza*.
9. Explain the structure of TMV.
10. Briefly explain the economic importance of Bacteria.
11. Write short note on the salient features of Cyanophyceae.
12. Describe the somatic features of *Rhizopus* thallus.
13. What are the general symptoms of plant diseases.
14. Explain the asexual mode of reproduction in *Vaucheria*.
15. What are biogeochemical cycles? Explain with examples.
16. What are the advanced characters of Charales.
17. Describe the industrial application of Charales.
18. What are the different types of asexual methods of reproduction in basidiomycetes?
19. Write an account on Citrus canker.
20. Describe the morphological variations in the thallus structure of Chlorophyceae.
21. Describe the economic importance of fungi.
22. Comment on the role of algae in soil fertility.
23. Describe the classification of bacteria based on morphology and staining reaction.
24. Lichens act as indicators of pollution. Justify.
25. Name two sources of agar.
26. What are coprophilous fungi?
27. Briefly explain food poisoning.
28. Why deuteromycetes are termed as fungi imperfecti?
29. What is the type of thallus in *Sargassum*?
30. Name two microbes used as the source of biofertilizer.
31. What are the symptoms of leaf mosaic of Tapioca.
32. What is dikaryon?
33. Classify bacteria based on their morphology.
34. Write brief note on the microbes involved in nitrogen cycle.

35. Give an account on the thallus structure of *Pinularia*.
36. Briefly explain the different types of asexual spores in algae.
37. Give an account on the thallus structure of *Vaucheria*.
38. Draw labelled diagram of the L.S of apothecium of *Peziza*.
39. What are the general characters of lichen?
40. Write a brief account on the economic importance of Lichen.
41. List any four symptoms of root wilt of coconut.
42. What are Phytoalexins?
43. Write a brief note on the economic importance of *Saccharomycetes*.
44. Describe the mycelial structure of *Rhizopus*.
45. What are algal blooms?
46. List any four characteristics of *Cyanophyceae*.
47. Write a brief note on diplobiontic life cycle.
48. What is neuromotor apparatus.
49. Differentiate isogamy and anisogamy.
50. What is rhizosphere? What is its importance?
51. Reproduction in *Nostoc*.
52. Write differences between teleospores and uredospores.
53. Explain the role of microorganisms in the production of milk products.
54. What is the difference between bacterium and mycoplasma.
55. Name two sources of carrageenin.
56. Which alga produce 'dwarf males'?
57. Describe receptacle in *Sargassum*.
58. Write notes on *Palmella* stage.
59. Differentiate between receptacles and conceptacles.
60. Mention economic importance of diatoms.
61. Illustrate the structure of TMV.

### III. Answer any six (6 x 4 = 24 marks)

1. Describe the ultrastructure and reproduction in bacteria.
2. Write an essay on the range of thallus structure and reproduction in green algae.
3. Describe the life cycle of *Puccinia*.
4. Describe the structure and reproduction in *Oedogonium*.
5. Give an account of the structure and reproduction in *Agaricus*.
6. With a suitable diagram, explain the life cycle of *Polysiphonia*. Add notes on its post fertilization changes.
7. Write an essay on the economic importance of bacteria with suitable examples.
8. Outline the classification of fungi proposed by Anisworth.
9. Describe the symptoms, casual organism and control measures of Blast disease of paddy.
10. Explain the structure of *Nostoc* cell.
11. Asexual reproduction in *Rhizopus*.
12. Explain the salient features of brown algae.
13. Internal structure of *Peziza*.

14. Write an essay on the sexual reproduction in spirogyra.
15. Explain the classification of fungi by Alexopoulose.
16. Explain the structure of bacteriophage.
17. Briefly explain the economic importance of fungi.
18. Describe the structure of *Xylaria* thallus.
19. Describe the different types of fruiting bodies in ascomycetes.
20. Describe cap cell formation in Oedogonium.
21. Describe the sexual reproduction in *Polysiphonia*.
22. Explain reproduction in Lichen.
23. Describe symbiotic and non-symbiotic nitrogen fixation.
24. Explain vegetative structure of Volvox with suitable illustration.
25. Describe with diagrams the reproduction in Usnea.
26. Write an account of reproduction in Nostoc.
27. Give an account of asexual reproduction in penicillium.
28. Describe with diagram the fruiting body of Peziza.
29. Describe the mode of reproduction in chlorella.
30. Microbial methods of waste water management.
31. Explain lysogenic cycle. How is it different from lytic cycle.
32. Briefly explain the role of microbes in soil fertility giving special emphasis on Nitrogen fixation.
33. Give a brief account of formation of Synzoospore.
34. What are the general symptoms of plant diseases?
35. Write general characters of Myxomycotina?
36. Describe pigmentation in algae.
37. Explain thallus organization in lichen.
38. Describe the distinguishing features of the class Basidiomycetes and point out the chief features in which it differs from the Ascomycetes.

**IV. Write essay on any two of the following. (2 x 15 = 30 marks)**

1. Explain the method of preparation and mode of action of Bordeaux mixture and tobacco decoction.
2. Explain the structure of bacterial cell. Explain the economic importance of bacteria.
3. Describe the general structure and classification of virus.
4. Describe the life cycle of Rhizopus.
5. What is a heteroecious fungus? Explain the life cycle of a heteroecious fungus you have studied with suitable diagrams.
6. Describe in detail the thallus evolution in algae.
7. Give an account of different stages of life cycle of Puccinia. Draw diagrams.
8. Describe with diagrams the structure and reproduction in chara.
9. Write an essay regarding the causative organism, symptoms, spread of disease and control of the following diseases.
  - a) Brown spot disease of paddy
  - b) Powdery mildew of Rubber
  - c) Tapioca Mosaic virus

10. With schematic representation explain the life cycle of Polysiphonia giving special mention on the reproduction and post fertilization changes.
11. Discuss the various mechanism of reproduction in bacteria. Explain how phages bring about genetic variations in bacteria.
12. Outline classification of algae proposed by F. E. Fritsch.
13. Describe the life cycle of a heteroecious rust fungus.

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