

M.Sc. BOTANY
First Semester
LOWER PLANT DIVERSITY-I
(MSB - 101)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any five of the following questions:

1. Describe the process of sexual reproduction in fungi in detail. Draw suitable diagram and label them well. (10)
2. Illustrate the life cycle of *Penicillium* species with proper diagram. Describe it well. (10)
3. What is virus? What are the characteristics of virus? Discuss the multiplication of T₄ bacteriophage. (2+3+5=10)
4. What are bacteria? Discuss the ultrastructure of bacteria with suitable diagrams. (2+8=10)
5. What is the difference between vertical and horizontal gene transfer? Write a note on sexual reproduction in bacteria. (2+8=10)
6. Describe the sexual reproduction of polysiphonia showing the formation of carposporophyte (Post fertilization changes) with diagrams. (10)
7. Discuss the role of pigments in the classification of algae with special reference to its different classes. (10)

8. What is the ecological significance of Lichens? Make a note on “Economic importance of Lichens”. (2+8=10)

10. Usnea is-

- a. Foliose Lichen
- b. Fructicose Lichen
- c. Crustose Lichen
- d. Filamentous Lichen

11. Lichen that are Rock dwellers with xerophytic adaptation are called

- a. Lignicolous
- b. Saxicolous
- c. Terricolous
- d. Corticolous

12. In Lichens sexual reproduction is carried out by

- a. Algae
- b. Fungi
- c. Both A & B
- d. None

II. Fill in the blanks:

1×8=8

1. The chemical nature of prion is _____. The PrP^{sc} form is formed due to modification of α -helix of PrP^c into _____ sheet.
2. n-acetylmuramic acid is more in gram _____ bacteria.
3. _____ is photolithoautotrophic bacteria.
4. 16S rDNA gene is used for molecular characterization of _____.
5. The core or spore protoplast of bacterial endospores contains abundant _____.
6. The bacteria with no flagella are called _____.
7. The Cro protein promotes _____ cycle of λ bacteriophage.
8. The lambda repressor protein is encoded by _____ gene.
