

M.Sc. BOTANY
First Semester
Lower Plant Diversity-I
(MSB-01)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20

Part-B (Descriptive)=50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

1. Write answers of the following questions in short (any five) $5 \times 2=10$

- a) Why blue green algae is called prokaryote.
- b) What do you mean by neutral spores and tetraspores.
- c) What are the different types of spores found in *Puccinia graminis*. Mention their host plants.
- d) What are the different cell wall composition of fungi.
- e) Discuss about the structure of a virus.
- f) Give two examples of photolithoautotrophic bacteria.
- g) What are Soredia?

2. Write answers of the following questions (any five) $5 \times 3=15$

- a) What are the structural peculiarities of a diatom cell? Discuss with suitable diagram.
- b) Discuss the structure of globule in *Chara*.
- c) Give a short note on mode of nutrition in fungi.
- d) What do you know about mycorrhiza?
- e) Describe the process of replication of bacteriophages .
- f) Describe the structure of cell wall of gram positive and gram negative bacteria
- g) Discuss the ecological significance of Lichens.

3. Describe the following questions (any five)

5 ×5=25

- a) With proper diagram discuss the sexual reproduction of *Oedogonium*.
- b) Discuss with proper diagram the asexual reproduction of *Volvox*.
- c) Discuss the range of vegetative modification in fungi.
- d) Asexual reproduction in *Penicillium* OR life cycle of *Alternaria*.
- e) Discuss about bacterial reproduction.
- f) Discuss about different mode of bacterial nutrition.
- g) Write a note on “internal structure of Lichens”. What is the role of Lichens in medical science?

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(The figures in the margin indicate full marks for the questions)

Duration: 20 minutes

Marks – 20

PART A- Objective Type

I. Mark the correct answer of the following questions:

1 × 20=20

1. Cyanophycin is a
a) Carbohydrate
b) Protein
c) Fat
d) None
2. Sargasso sea is named after an algae *Sargassum* which is a
a) Green algae
b) Red algae
c) Brown algae
d) Blue green algae
3. Which of the following red algae shows alternation of haploid and diploid multicellular generation
a) *Gelidium*
b) *Polysiphonia*
c) *Corallina*
d) All
4. *Laminaria* and *Fucus* are rich source of
a) Mg
b) I
c) Fe
d) None
5. Fucoxanthin, Neofucoxanthin, diatoxanthin and diadinoxanthin are characteristic pigments of
a) Myxophyceae
b) Cyanophyceae
c) Bacillariophyceae
d) Chlorophyceae
6. Epipelagic algae is
a) Attached to stone
b) Free floating
c) Attached to plants
d) Attached to sand or mud
7. The cell wall composition of the member of the fungi Oomycetes is mainly of
a) Chitin
b) Cellulose
c) Pectin
d) none
8. Sexual stage is missing in
a) *Puccinia*
b) *Alternaria*
c) *Penicillium*
d) None

9. Which of the following spores of *Puccinia graminis* can be found in soil
- a) Uredospore c) Teliospore
b) Basidiospore d) aecospore
10. 'Hartig net' is found in
- a) Ectomycorrhiza c) Endomycorrhiza
b) Ectendomycorrhiza d) both (a) and (b)
11. Dolipore septum is a characteristic of
- a) Ascomycotina c) Basidiomycotina
b) Zygomycotina d) Deuteromycotina
12. Biflagillate zoospores are found in
- a) Trichomycetes c) Zygomycetes
b) Basidiomycetes d) Oomycetes
13. Clamp connection is found in members of
- a) Mastigomycotina c) Ascomycotina
b) Zygomycotina d) Basidiomycotina
14. Outer membrane surrounding the cell wall is present in
- a) Gram negative bacteria c) both
b) Gram positive bacteria d) none
15. Rota Virus is
- a) Double stranded DNA virus c) Double stranded RNA virus
b) Single stranded DNA d) Single stranded RNA virus
16. Bergey's manual deals with classification of
- a) Bacteria c) both
c) Virus d) none
17. Maximum genetic recombination in bacteria takes place in
- a) Transformation c) Hfr conjugation
b) Transduction d) $F^+ \times F^-$ conjugation.
18. The outer proteinaceous cover of virus is called
- a) Capsid c) spikes
b) Envelope d) none
19. The algae part of the lichens is known as
- a) Phycobiont c) both
b) Mycobiont d) None
20. Usnea hanging from substratum is a
- a) Crustose lichens c) fructiose lichens
b) foliose lichens d) none of these