

Phycology, Mycology, Lichenology and Bryology

K1 and K2 questions

1. Cyanobacteria name has been given to

- a) Mycoplasma
- b) Myxophyceae**
- c) Myxomycetes
- d) Schizomycetes

2. Parasitic alga is

- A Cephaleuros**
- B Ulothrix
- C Spirogyra
- D Chlamydomonas

3. In Ulothrix, reduction division takes place at the time of

- A germination of zygote**
- B formation of spores
- C formation of gametes
- D formation of zoospores

4. Agar-Agar is derived from

- A fungi
- B algae**
- C bryophytes
- D gymnosperms

5. Simplest type of reproduction in plants is found in

- A Ulothrix
- B Nostoc
- C Chlamydomonas**
- D Spirogyra

6. Which one of the following algae is a source of iodine ?

- A Polysiphonia
- B Laminaria**
- C Nostoc
- D Diatoms

7. Pyrenoids are found in which of the following organs of Spirogyra:

- A Nucleus

B Cytoplasm

C Chloroplast

D Cell wall

8. The blue-green algae belong to

A Eukaryota

B Prokaryota

C Myxomycetes

D None of these

9. The red alga devoid of red pigment is

A Gracilaria

B Batrachospermum

C Polysiphonia

D Laminaria

10. Ulothrix is found in

A hot sandy desert

B slow running water

C rocky places

D sea

11. Fucoxanthin is found in

A brown algae

B green algae

C red algae

D blue-green algae

12. Alga rich in protein is

A Ulothrix

B Chlorella

C Oscillatoria

D Spirogyra

13. Heterotrichous habit is shown by

A Chlamydomonas

B Oedogonium

C Stigeoclonium

D Ulothrix

14. The algae which help in the fixation of nitrogen belongs to class

A Rhodophyceae

B Cyanophyceae

C Chlorophyceae

D Phaeophyceae

15. The food reserve in blue green algae is

A cyanophycean starch

B globulin

C fats and oils

D cellulose

16. A motile reproductive unit is called

A Zygote

B Zoospore

C Aplanospore

D None of these

17. The food reserve is fat/oil in

A Xanthophyceae

B Phodophyceae

C Aplanospore

D None of these

18. The photosynthetic pigments of Chlamydomonas are located in

A grana

B thylakoid

C stroma

D pyrenoid

19. Which of the following algae produces Palmella stage ?

A Chlamydomonas

B Cystopus

C Oedogonium

D Scytonema

20. Agar-Agar is obtained from

(a) Gelidium (b) Nostoc (c) Chlamydomonas (d) Ulothrix

21. Which one of the following algae has the ability to fix the atmospheric nitrogen?

(a) Ulothrix **(b) Nostoc** (c) Spirogyra (d) Oedogonium

22. The term “algae” was coined by

- (a) Theophrastus (b) Fritsch (c) Engler **(d) Linnaeus.**
23. "Red rust of tea" is caused by parasitic
(a) Bacteria (b) Fungi **(c) Algae** (d) None of these
24. Mark the Parasitic algae
(a) Cephaleuros (b) Ulva (c) Anabaena (d) All of these
25. Water bloom is generally caused by
(a) Green algae **(b) Blue green algae** (c) Bacteria (d) Hydrilla
26. Synzoospore is formed in
(a) Oedogonium (b) Ulothrix (c) Ectocarpus **(d) Vaucheria**
27. The chief pigments of Blue green algae is –
(a) c-phyococyanin (b) c-phycoerythrin (c) Both **(d) Allophycocyanin**
28. The phenoninon of "red snow" is exhibited in polar regions by a chlamydomonas species.
(a) C.nivalis (b) C.coccifera (c) C. media (d) C. reticulate
29. The plants of volvox are found in
(a) Fresh water ponds (b) Estuaries (c) Rivers (d) Hot water springs
30. The plants of chara measure in length about
(a) 10-15cms **(b) 20-30 cms** (c) 30-50 cms (d) 50-60 cms
31. The nucule of chara is capped by-
(a) Nodal cells (b) Inter nodal (c) Tube cells (d) Coronary cells
32. The vaucheria plant shows the following habit-
(a) Filamentous **(b) Siphonous** (c) Coccoid (d) Dendroid
33. The apical cell of Ectocarpus is
(a) Dome shaped (b) Capitates **(c) Pointed** (d) Lobed
34. The pit-connections are present in polysiphonia in between.
(a) Axial cells (b) Axial and pericentral cells (c) Pericentral cells **(d) All of these**
35. The carposporophytic phase of polysiphonia is represented by
(a) Carposporangium **(b) Cystocarp** (c) Carpogonial filament (d) All of these

Unit II

36. Which of the following do all fungi have in common?
A) meiosis in basidia B) coenocytic hyphae
C) sexual life cycle **D) absorption of nutrients**
37. Which of the following is a characteristic of hyphate fungi (fungi featuring hyphae)?
A) They acquire their nutrients by phagocytosis.

- B) Their body plan is a unicellular sphere.
- C) Their cell walls consist mainly of cellulose microfibrils.

D) They are adapted for rapid directional growth to new food sources.

38. What is the primary role of a mushroom's underground mycelium?

- A) absorbing nutrients**
- B) anchoring
- C) sexual reproduction
- D) asexual reproduction.

39. In septate fungi, what structures allow cytoplasmic streaming to distribute needed nutrients, synthesized compounds, and organelles throughout the hyphae?

- A) multiple chitinous layers in cross walls
- B) pores in cross walls**
- C) complex microtubular cytoskeletons
- D) two nuclei

40. What accounts most directly for the extremely fast growth of a fungal mycelium?

- A) rapid distribution of synthesized proteins by cytoplasmic streaming**
- B) a long tubular body shape
- C) the readily available nutrients from their ingestive mode of nutrition
- D) a dikaryotic condition that supplies greater amounts of proteins and nutrients

41. In most fungi, karyogamy does not immediately follow plasmogamy, which consequently

- A) means that sexual reproduction can occur in specialized structures.
- B) results in multiple diploid nuclei per cell.
- C) allows fungi to reproduce asexually most of the time.

D) results in heterokaryotic or dikaryotic cells

42. Which of the following is characterized by the lack of an observed sexual phase in its members' life cycle?

- A) Glomeromycota
- B) Basidiomycota
- C) Chytridiomycota

D) Deuteromycota

43. Zygosporangia are to zygomycetes as basidia are to

- A) basal fungi.
- B) chytrids.
- C) sac fungi.

D) club fungi.

UNIT III

44. The term lichen was first used by

- (a) Aristotle (b) Dioscorides (c) **Theophrastus** (d) All the these

45. The Lichens are

- (a) Fast growing, short lived (b) Fast growing, long lived
(c) Slow growing, short lived (d) **Slow growing, long lived**

46. Reindeer" moss is

- (a) **Cladonia sp.** (b) Cetraria sp (c) Usnea sp. (d) Parmelia sp.

47. "Iceland" moss is

- (a) Usnea sp. (b) Cetraria sp. (c) Parmelia sp. (d) **Lecanora sp.**

48. Lichen growing on rocks are called as.

- (a) Corticoles (b) Lignicoles (c) Terricoles (d) **Saxicoles**

49. The following lichen is used as food in tundras.

- (a) **Caladonia** (b) Parmelia (c) Evernia (d) All of these

50. Which of the following is a poisonous lichen?

- (a) **Lethoria Vulpina** (b) Lecanora esculentia (c) Usnea Parbata (d) All of these

51. Urcein dye is obtained from the lichen

- (a) Lasallia (b) Cladonia (c) Ramalin (d) **Lecanora**

52. Lichens are composite structures consisting of algae and.

- (a) Mosses (b) Protozoa (c) **Fungi** (d) Bacteria

53. Vegetative reproduction in Lichen occurs by

- a) Soredia b) isidia c) fragmentation (d) **all of these**

54. In sexual reproduction, the fruiting body is formed is of

- a) apothecium type b) perithecium type (c) **both a and b** d) none of these

55. Asexual reproduction in lichen takes place by formation of

- a) zygosporos b) aplanosporos (c) **pycnidiosporos** d) chlamydosporos

56. In lichens, sexual reproduction is carried out by

- (a) **fungal partner** b) algal partner c) both a and b d) depends on habitat

57. The male reproductive organ is called

- a) carpogonium b) trichogyne c) hymenium (d) **spermagonium**

58. The female reproductive organ is called

- a) **carpogonium** b) trichogyne c) hymenium d) spermagonium

59. The fertile layer of ascocarp where ascus is located is called

a) paraphysis **b) hymenium** c) peridium d) subhymenium

60. Each ascus contains generally

a) 2 ascospores b) 4 ascospores **c) 8 ascospores** d) 16 ascospores

61. If both algal cells and fungal hyphae are uniformly distributed in lichen formation, then called as

a) homoisomerous lichen

b) heteroisomerous lichen

c) homoheteroisomerous lichen

d) hemisomerous lichen

62. Litmus is obtained from

a) Usnea b) Cladonia c) Peltigera **d) Roccella**

UNIT IV and V

63. The group of plants referred to as “amphibians of plant kingdoms”.

(a) Bryophytes (b) Mosses (c) Liverworts (d) Hornworts

64. In thallose bryophytes the rhizoids and scales are

(a) Both unicellular (b) Both multicellular

(c) Multi and unicellular respectively **(d) Uni and multicellular respectively**

65. Gemmae are asexual reproductive bodies in.

(a) Liverworts only (b) Hornworts only (c) Liverworts and mosses **(d) All of these**

66. Gemma cup is formed in

(a) Marchantia (b) Lunularia (c) None of these **(d) Both of these**

67. The term “Bryophyta” was given by

(a) Engler **(b) Braun** (c) Schimper (d) Campbell

68. Which of the following is an aquatic bryophyte?

(a) Anthoceros halli (b) Riccia discolor (c) Sphagnum compactum **(d) Riccia fluitans** g. The

69. Oldest fossil bryophyte recorded is a sp. of

(a) Ricciopsis **(b) Hepaticites** (c) Marchantites (d) Muscites

70. The bryophytes lack

(a) True roots (b) Vascular tissue **(c) Both of these** (d) Both of these and embryo formation

71. Spore mother cell in bryophyte is

(a) Haploid **(b) Diploid** (c) Triploid (d) Tetraploid

72. Androcytes give rise to:

(a) Androgonia **(b) antherozoids** (c) Androcytes (d) None

73. Antherozoid mother cells are:

(a) Androgonia (b) antherozoids **(c) Androcytes** (d) None

74. The basal swollen portion of the archegonium is
(a) Venter (b) Neck (c) Jacket (d) Oospere
75. To which group would you assign a plant which produces spores, embryo but lacks seed and vasculature?
 a) algae b) fungi c) Pteridophyta **d) Bryophyta**
76. Gemmae are asexual reproductive bodies of
 a) anthocertopsida **b) Liverworts** c) Mosses d) Gymnosperms
77. Venter is the part of
 a) antheridium **b) archegonium** c) sporangium d) operculum
78. The number of cells in neck canal of archegonia in moss is
 a) 2 uni nucleated b) binucleated c) 4 uninucleate **d) 6-10 uninucleate**
79. The peristome of moss capsule consists of
 a) 8 teeth b) 12 teeth **c) 32 teeth** d) 64 teeth
80. The development of a sporophyte from moss gametophyte without gamete formation is called
 a) apospory **b) apogamy** c) Parthenogenesis d) Amphimixis
81. Protonema is
 a) a fossil pteridophyte **b) the juvenile phase of a moss gametophytes**
 c) a part of the sporophytes of funaria d) none of these
82. The only positive evidence of aquatic ancestry of bryophytes is
 a) their green colour **b) ciliated sperms** c) some forms are still aquatic d) thread like protonema
83. Which of the following is least likely to occur along the sea coast?
 a) Brown algae **b) mosses** c) Green algae d) red algae
84. Moss plant with capsule is an example of.
 a) sporophyte completely dependent on gametophyte
b) sporophyte partially dependent on gametophyte
 c) sometimes a and sometimes b
 d) None of the above.
85. Bryophytes flourish in moist and shady environments because
 a) They cannot grow on land
 b) They lack vascular tissues
 c) They lack roots and stomata
d) Their gametes fuse in water
86. Which one of the following statements is not true of Bryophyta
 a) Their spores germinate producing gametophytes
b) Their zygote undergoes meiosis and then produces the sporophyte
 c) They are photosynthetic
 d) They lack tracheids and sieve tubes
87. Spore mother cell in Bryophytes is
 a) Haploid **b) Diploid** c) Triploid d) Tetraploid

88. Elaters are present in sporogonium of

a) Riccia **b) Marchantia** c) sphagnum d) Selaginella

89. Sporogenous tissue is of amphithecium origin in

a) Riccia **b) anthoceros** c) Marchantia d) Funaria

90. Funaria is a bryophyte because

a) it lacks xylem

b) it lacks roots

c) sporophyte is attached to gametophyte

d) it has heteromorphic alternation of generations

91. The air cavities in the capsule of moss are partitioned with delicate strands of cells these are called

a) septa **b) Trabeculae** c) Compartments d) Partitions

92. The dehiscence of moss capsule takes place by the rupture of the following

a) Calyptra b) Operculum c) Peristome **d) Annulus**

93. In moss sporophyte, following is absent

a) foot b) seta c) Columella **d) elaters**

94. In anthoceros, Nostoc colonies occur in

a) slime pores

b) guard cells

c) mucilage cavities

d) lower epidermis

95. The main conducting part inside the capsule of Funaria is

a) apophysis **b) columella** c) spore sac d) seta

96. Sporogonium is a sporophyte consisting of

a) capsule b) foot c) seta **d) all of these**

97. Polytrichum is commonly called as

a) cold mass **b) hairy cap moss** c) turf moss d) maiden hair moss

98. Largest archegonium of plant kingdom is present in

a) Funaria b) Riccia c) Marchantia d) Anthoceros

99. Protonema is

a) a fossil pteridophyte

b) the juvenile phase of moss gametophyte

c) a part of sporophyte of funaria

d) none of the above

100. The gametophytes of which of the following show gregarious habit

a) Riccia b) Anthoceros c) Marchantia **d) Funaria**

K3 question

Unit I

1. Write short notes on Terrestrial and Fresh water,
2. Write briefly about Marine algae and its economic importance.
3. Explain the thallus organization in algae.
4. Give a brief account on sexual reproduction in algae.
5. Write short notes on ultra structure of an algal cell with neat diagrams.
6. Explain briefly about the Flagella, Chloroplast, Pyrenoids and Eye Spots in major groups of algae.
7. Give brief outline on Principles of Fritsch classification of algae.
8. Write short notes on Algal Blooms with examples
9. *Write briefly about Economic importance of Algae with examples*
10. *Explain the role of algae as food and bio-fuels –*
11. *Explain the algae as source of chemicals and drugs*
12. *What are Algal Bioinoculants? Explain its role in crop improvement.*

UNIT II

1. Write short notes on Cyanophyceae and Chlorophyceae with examples
2. Explain briefly about Xanthophyceae and Bacillariophyceae with examples
3. Write briefly about Phaeophyceae and Rhodophyceae
4. Explain the life histories of *Chlorella* and *Bulbochaete*,
5. *Write short notes on Padina and Gelidium. Add some economic importance*
6. *Write briefly about Diatoms and Vaucheria. Add notes on its economic importance.*

Unit III

1. Write briefly about general characteristics of Fungi.
2. Write short notes on Range of thallus Organization –
3. Write short notes on architecture of fungal cells and cell organelles
4. Write short notes on nutrition in fungi including factors affecting fungal growth.
5. Write short notes on types of reproduction in fungi.
6. Illustrate the Life-histories of *Plasmodiophora* and *Penicillium* with suitable diagrams.
7. Explain the structure of *Pleurotus* and *Cercospora* with suitable diagrams.

Unit IV

1. Write short notes on Heterothallism and Heterokaryosis and Parasexual cycle
2. Write briefly about Fungi as Parasitic and Mutualistic Symbionts.

3. Give a brief account on Economic Importance of Fungi.
4. Enumerate the General characteristics of Lichens give some examples
5. Write short notes on phycobionts and mycobionts,
6. Write short notes on structure and reproduction on lichens
7. Write briefly about Lichens are indicators of pollution –
8. Explain the economic importance of lichens.

Unit V

1. Write short notes on Origin of Bryophyta and its evolution,
2. Write briefly about structural organization of gametophyte of Bryophytes with examples
3. Write short notes on sporophyte in different classes of Bryophytes with examples
4. Explain the life history of *Marchantia*
5. Write briefly about the life history of *Porella*,
6. Give a brief account on *Anthoceros* with examples
7. Write short notes on *Polytrichum* with examples
8. Write short notes on Bryophytes as pollution indicators.

K4 Questions.

Unit I

1. Write an essay on occurrence of Algae in diverse habitats
2. Illustrate the Thallus organization and reproduction in algae
3. Give a detailed account on Ultra structure of an algal cell, Flagella, Chloroplast, Pyrenoids and Eye Spot found in major groups of algae.
4. Give an detailed account on Principles of Fritsch classification
5. Write an essay on Life cycle patterns in Algae and Algal Blooms
6. Give an account on Economic importance of Algae With suitable examples.

Unit II

1. Write an essay on classes of Cyanophyceae and Chlorophyceae with examples
2. Give an detailed account on Xanthophyceae and Bacillariophyceae with suitable examples
3. Give an account of Phaeophyceae and Rhodophyceae with suitable examples with economic importance.
4. Give a brief account on Life histories of *Bulbochaete* and *Padina* with economic importance.
5. Give an account on *Gelidium* and *Anabaena*. Add notes on its economic importance.
6. Give detailed account on Diatoms and *Vaucheria* add notes on its economic importance.

Unit III

1. Write an essay on General Characteristics of Fungi –
2. Comment on thallus Organization architecture of fungal cells.
3. Enumerate the Nutrition and growth in fungi including factors affecting fungal growth.
4. Write an essay on types of reproduction in fungi.
5. Give an account on Ainsworth Classification of Fungi.
6. Comment on some important Diagnostic features of fungi.

7. Explain the Life-history and Structure of *Plasmodiophora* and *Penicillium*,
8. Give a detailed account on *Neurospora* and *Pleurotus* with economic importance.
9. Give an account on *Fusarium* and *Cercospora* add notes on economic importance.

Unit IV

1. Write essay on Fungal genetic variation and evolution –
2. Explain the Heterothallism, Heterokaryosis and Parasexual cycle in fungi
3. Write an essay on nutrition in fungus.
4. *Give an account on Economic Importance of Fungi.*
5. Enumerate the General characteristics of lichens
6. Give an detailed sketch on Hale classification of lichens
7. Give an account on occurrence and interrelationship of phycobionts and mycobionts,
8. Write briefly about structure and reproduction of lichens add notes on its economic importance of lichens.

Unit V

1. Give an detailed account on Proskauer classification of Bryophytes.
2. Write an essay Origin and evolution of Bryophyta
3. Give an detailed account on structural organization of gametophyte and sporophyte in Bryophytes
4. Sketch out the life histories of *Marchantia* and *Porella* with suitable diagrams
5. Give an account on complete history of *Fossombronia*, *Anthoceros* and *Polytrichum* with suitable diagrams
6. Explain the Economic importance Bryophytes as pollution indicators.