

PLANT KINGDOM WS 1

Class 11 - Biology

Section A

1. Holdfast, stipe, and frond constitutes the plant body in case of: [1]
 - a) Phaeophyceae
 - b) Chlorophyceae
 - c) Rhodophyceae
 - d) All of these
2. Angiosperm: roots :: Rhodophyta :? [1]
 - a) Holdfast
 - b) Substratum
 - c) Prop root
 - d) Root hair
3. Which of the following shows no segregation of plant parts? [1]
 - a) Pteridophyta
 - b) Bryophyta
 - c) Algae
 - d) Gymnosperm
4. Fusion between one large and non-motile female gamete with smaller, motile male gamete is termed as _____. [1]
 - a) Homogamous
 - b) Anisogamous
 - c) Isogamous
 - d) Oogamous
5. Spirulina is used in medicines, from which type of plants it is derived? [1]
 - a) Algae
 - b) Pteridophytes
 - c) Fungi
 - d) Bryophytes
6. Which is the main habitat of algae? [1]
 - a) Water
 - b) Moist soil
 - c) Underground
 - d) Dry soil
7. Cyanobacteria are classified under: [1]
 - a) Plantae
 - b) Protista
 - c) Algae
 - d) Monera
8. Thallus of Riccia is _____. [1]
 - a) Triploid
 - b) Diploid
 - c) Tetraploid
 - d) Haploid
9. Pteridophytes differ from mosses in having: [1]
 - a) Independent and dominant sporophyte
 - b) Dependent gametophyte
 - c) Independent gametophyte
 - d) Flagellate antherozoids
10. Liverworts are closely related to _____. [1]

- a) Fungi
c) Lichen
- b) Algae
d) Mosses
11. Which of the following is also known as the amphibian of the plant kingdom? [1]
a) Pteridophytes
b) Gymnosperms
c) Bryophytes
d) Algae
12. In mosses, the sex organs arise from: [1]
a) Foot
b) Leaf apex
c) Setae
d) Capsule
13. Which one is peat moss? [1]
a) Marchantia
b) Sphagnum
c) Equisetum
d) Chara
14. Which of the following includes a diploid structure? [1]
a) Gametophyte and antheridia
b) Gametophyte and spore mass
c) Gametophyte and Capsule
d) Gametophyte and oospores
15. The main plant body of the bryophyte is _____. [1]
a) Haploid
b) Diplo-haplontic
c) Haplo-diplontic
d) Diploid
16. Which plant division is known as amphibians _____. [1]
a) Gymnosperms
b) Thallophyta
c) Bryophytes
d) Angiosperms
17. Some plants are dependent on the larger plant for space only. Such plants are called as _____. [1]
a) bryophyte
b) Epiphytes
c) Mesophytes
d) Halophytes
18. **Assertion (A):** Chlamydomonas form red snow. [1]
Reason (R): Chlamydomonas have haematochrome.
a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.
19. **Assertion (A):** Sea palm is a brown alga. [1]
Reason (R): The Phaeophyta are highly evolved types of brown algae.
a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.
20. **Assertion (A):** Food reserves of algae vary from group to group. [1]
Reason (R): Algae are autotrophic in nature.

- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
21. **Assertion (A):** Phaeophyta reproduces sexually by oogamy only. [1]
Reason (R): Both gametes of phaeophyta are motile.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
22. **Assertion (A):** Nostoc lives in Anthoceros thallus. [1]
Reason (R): Nostoc obtains organic nutrition from Anthoceros.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
23. **Assertion (A):** The plant body of bryophytes is more differentiated than that of algae. [1]
Reason (R): They may possess root-like, leaf-like or stem-like structures.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
24. **Assertion (A):** The sporophyte of Anthoceros is long-lived. [1]
Reason (R): Sporophyte of Anthoceros is semi independent.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
25. **Assertion (A):** Nepenthes khasiana is a carnivorous plant. [1]
Reason (R): Leaves highly specialised to catch insects in carnivorous plant.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
26. **Assertion (A):** The sex organs in bryophytes are jacketed. [1]
Reason (R): Bryophytes are land plants.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false. d) A is false but R is true.
27. **Assertion (A):** Sporogonium of Riccia is totally dependent on the gametophyte. [1]
Reason (R): Sporogonium of Marchantia is partly dependent on the gametophyte.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

28. Identify the algae present in the figure

[1]



a) Spirogyra

b) Volvox

c) Chara

d) Chlamydomonas

29. Lichen is usually cited as an example of **symbiosis** in plants where an algal and a fungal species live together for their mutual benefit. Which of the following will happen if algal and fungal partners are separated from each other? [1]

Based on your answer how do you justify this association as symbiosis?

a) Both will die.

b) Both will survive and grow normally and independently of each other.

c) The fungal component will survive while the algal partner will die.

d) The algal component will survive while the fungal component will die.

30. In the ocean life which plant is the major producer? [1]

31. What is the name of pigments present in Chlorophyceae? [1]

32. Food is stored as Floridean starch in Rhodophyceae. Mannitol is the reserve food material of which group of algae? [1]

33. What is the name of food stored in Phodophyceae? [1]

34. Protonema stage is found in which type of plants? [1]

35. What is shape of plant body of a liverwort? [1]

Section B

36. Write about habit and habitat of algae. [2]

37. What is cytotaxonomy? [2]

38. Write short notes on: Medicinal use of Algae [2]

39. Write short notes on: Importance of carbon fixation by algae [2]

40. What are the main differences among Chlorophyceae, Phaeophyceae and Rhodophyceae? [2]

41. What is the basic assumption behind phylogenetic classification? [2]

42. Compare green algae with red algae. [2]

43. Why does a Bryophyte supposed to be an amphibian of the plant kingdom? [2]

44. Write three characteristic features of Bryophyta. [2]

45. What is the general structure of Bryophytes? [2]

46. Write few important features of mosses. [2]

47. Write one feature each of liverworts and mosses. [2]

48. How do mosses prevent soil erosion? [2]

Section C

49. Differentiate between Zygosporangium and Zoosporangium. [3]

50. Differentiate between Algae and Bryophytes. [3]

51. Differentiate between Green algae and Brown algae. [3]

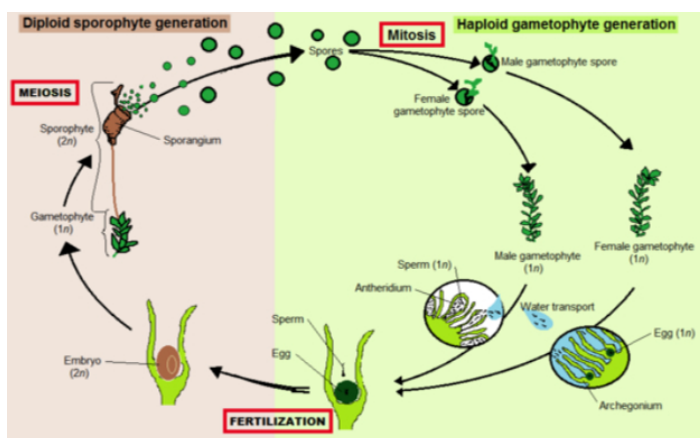
52. What are the industrial uses of algae? [3]

53. Describe the type of photosynthetic pigments in red algae, green algae and brown algae. [3]
54. Mention the ploidy of the following: [3]
- Protonemal cell of a moss
 - Primary endosperm nucleus in dicot
 - Leaf cell of a moss
 - Prothallus cell of a fern
 - Gemma cell in Marchantia
 - Meristem cell of monocot
 - Ovum of a liverwort
 - Zygote of a fern
55. What is the basis of classification of algae? [3]
56. Write a brief note on numerical taxonomy. [3]
57. Distinguish between bryophytes and pteridophytes. [3]
58. Bryophytes are found in which diverse habitats. Describe briefly. [3]
59. Differentiate between the following: [3]
- Red algae and brown algae
 - Liverworts and moss
 - Homosporous and heterosporous pteridophyte
60. Write the differences in Sexual Reproduction of Moss and Fern. [3]
61. Distinguish between Sporophyte and Gametophyte. [3]

Section D

Question No. 62 to 64 are based on the given text. Read the text carefully and answer the questions: [3.99]

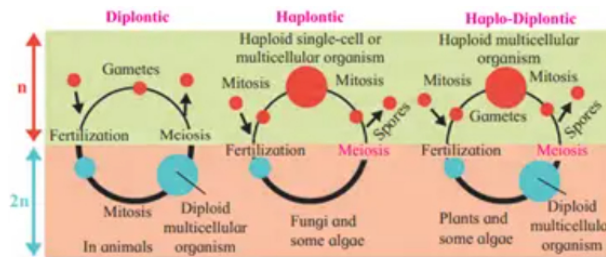
Bryophytes are mostly terrestrial plants. They are found in moist shady places. But they need water for fertilization and completion of their life cycle. Hence they are called 'amphibious plants'. The plant body of bryophytes is more differentiated than that of algae. It is thallus-like and prostrate or erect, and attached to the substratum by unicellular or multicellular rhizoids. They lack true roots, stem or leaves. They may possess root-like, leaf-like or stem-like structures. The main plant body of the bryophyte is haploid. It produces gametes, hence is called a gametophyte. The sex organs in bryophytes are multicellular. The male sex organ is called antheridium. They produce biflagellate antherozoid.



62. Define rhizoids and give its functions.
63. Enlist the name of the male and female sex organ present in bryophytes and what they produce.
64. Name the group of plant which are commonly called as Amphibians of Plant Kingdom and why?

Question No. 65 to 67 are based on the given text. Read the text carefully and answer the questions: [3.99]

In plants, both haploid and diploid cells can divide by mitosis. This ability leads to the formation of different plant bodies - haploid and diploid. The haploid plant body produces gametes by mitosis. This plant body represents a gametophyte. Following fertilization the zygote also divides by mitosis to produce a diploid sporophytic plant body. Haploid spores are produced by this plant body by meiosis. These in turn, divide by mitosis to form a haploid plant body once again. Thus, during the life cycle of any sexually reproducing plant, there is an alternation of generations between gamete producing haploid gametophyte and spore-producing diploid sporophyte.



65. Name the plant or organism which represent the haplontic pattern of life cycle.

66. What is mean by alternation of generations?

67. What is meant by,

- Diplontic life cycle
- Haplontic life cycle

Section E

Question No. 68 to 72 are based on the given text. Read the text carefully and answer the questions:

[5]

Gametophyte is a dominant phase in the life cycle of a bryophyte. It is more conspicuous, long living, independent, green and freely branched whereas, the sporophytic phase is short lived and dependent upon the gametophyte. The main plant body is haploid and bears sex organs i.e., antheridium and archegonium. Antheridium produces a large number of flagellated male gametes called antherozoids and archegonium is flask shaped with tubular neck and swollen venter. The gametophytic plant body of bryophytes is thalloid in liverworts whereas foliose in mosses. In liverworts, the thallus is differentiated into a dorsal photosynthetic and ventral storage region. In mosses, the gametophyte has two growth stages-protonema stage and leafy stage or gametophore.

68. Protonema is _____.

- | | |
|----------------------------------|----------------------------------|
| a) Haploid and in pteridophytes. | b) Haploid and in pteridophytes. |
| c) Diploid and in liverworts. | d) Haploid and in mosses. |

69. Bryophytes require water in their habitat for _____.

- | | |
|--|--|
| a) Vegetative propagation. | b) Filling archegonia for fertilization. |
| c) Swimming of sperms to egg in archegonium. | d) Their homosporous nature. |

70. In a moss, sporophyte

- | | |
|---|---|
| a) Manufactures food for itself as well as for gametophyte. | b) Arises from a spore produced from the gametophyte. |
| c) Is partially parasitic on gametophyte. | d) Produce gametes that give rise to gametophyte. |

71. Plants which produce spores and embryo but lack vascular tissue and seeds are

- | | |
|---------------|---------------|
| a) Bryophytes | b) Gymnosperm |
|---------------|---------------|

c) Algae

d) Pteridophytes

72. **Assertion (A):** Moss protonema resemble green alga.

Reason (R): It develops unicellular sex-organs.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

73. Describe major features of Plant Kingdom.

[5]

74. Explain briefly the following terms with suitable examples:

[5]

i. Protonema

ii. Antheridium

iii. Archegonium

iv. Diplontic

v. Sporophyll

vi. Isogamy

75. Draw labelled diagrams of

[5]

a. Female and male thallus of a liverwort.

b. Gametophyte and sporophyte of Funaria.

c. Alternation of generation in Angiosperm.