1Mark Questions

1. Choose the correct answer.
   The photosynthetic thalloid gametophyte of pteridophyte is called
   A.Gemma B.Prothallus
   C.Protonema D.Capsule *2017 2nd term*

2. Observe the relationship and fill in the blanks.
   a) Coralloid root : Association of roots with N_2 fixing cyanobacteria
   b) .....:Association of roots with fungi. *2019 1st term.*

3. Fill in the blanks.

Class	Common Name	Stored Food
_____(a)_____	Green Algae	Starch
Rhodophyceae	Red Algae	_____(b)_____

2019 1st term.

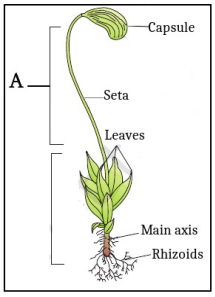
4. Reserve food of Rhodophyceae is _____ *2022 Model*

5. Choose the correct answer.
   Reserve Food in Phaeophyceae
   (Floridean starch, Mannitol, Starch, Algin)
   2022 June

6. Which plant group is known as 'Amphibians of Plant Kingdom'? *2022 Imp*

7. Green, multicellular asexual buds of liverworts are called.....
   a) Gemmae b) Antherozoid
   c) Zoospore d) Conidia *2022 2nd term*

8. Observe the figure given below. It shows two phases in the life-cycle of Funaria. Identify and write the phase marked as "A".



2023 Model

9. Observe the relationship of first pair and fill in the blank:
   Algin: Brown algae
   Carrageen: _____ *2023 March.*

10. Fill in the blanks :
    The male sex organ of Bryophytes is called ___.
    2023 Imp

11. Asexual reproduction in liverworts takesplace by the formation of specialised structures called_____.
    a) Gemmae b) Protonema
    c) Prothallus
    2024 Model

2 Marks Questions

1. Most pteridophytes are homosporous, but there are exceptions.
   a) Identify two heterosporous genera
   b) 'Heterospory is a precursor to seed habit'. Point out any one common character found in heterospory and seed habit. *2012 March*

2. Eventhough algae are primary producers on aquatic ecosystems, man is benefited by algae in a variety of ways.Write any four points in favour of this statement. *2012 March*

3. The following is a list of characteristic features of angiosperms and gymnosperms. Choose those characters that blong to gymnosperms.
   a) Tracheids alone form the conducting elements in xylem.
   b) Production of fruits
   c) Naked seeds
   d)Cones are seen
   e)Flowers absent
   f) Xylem mainly contais vessels
   g)Double fertilisation present *2012 Imp*

4. Give reasons for the following:
   a)Bryophytes are called amphibians of plant kingdom.
   ~~b)Fertilisation in angiosperm is called double fertilisation.~~ *2013 Imp*

5. Unlike a majority of the pteridophytes, genera like Selaginella and Salvinia show a unique feature in spore formation.
   a)What is this feature?
   b)Briefly comment on its significance
   2014 March

6. Match the following.

A	B
a)Floridean starch	Gymnosperm
~~b)Double fertilization~~	Red algae
c)Coralloid roots	Fern
d)Prothallus	~~Angiosperm~~

2014 Imp.

7. Complete the given table of algal divisions and their main charateristics by filling 'a', 'b', 'c' and 'd'.

Chlorophyceae	Chlorophyll-a,b	.....(a).....
Phaeophyceae	Chorophyll-a,c and .....(b).....	Laminarin Mannitol
.....(c).....	Chlorophyll-a,d and Phycoerythrin	.....(d).....

2015 March

8. 'Amphibians of plant kingdom' is used to denote a specific group in plant kingdom. Name the plant group and list any three vegetative or reproductive characters of that plant group. *2015 Imp*

9. Write any two distinguishing features of the algal class Rhodophyceae. *2016 March*

10. Distinguish between mycorrhiza and coralloid roots. *2016 March*

11. Algae are useful to man in a variety of ways. Suggest any four uses of algae. *2017 March*

12. Distinguish between protonema and prothallus. *2017 Imp*

13. Analyse the table and fill in the blanks.

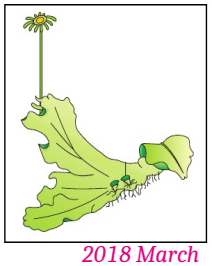
A	B	C
(a)	Green algae	Starch
Phaeophyceae	(b)	(c) .....
Rhodophyceae	Red algae	(d) .....

2017 2nd term

14. Certain pteridophytes produce two types of spores. Name this condition. Write the evolutionary significance of this condition. *2017 2nd term*

15. Artificial system and natural system are two systems of classification. Who are the proponents of these two systems ? Write the criteria used by them for these classifications. *2018 Model*

16. The given figure shows a plant belonging to liverworts. Identify the plant. Name the asexual buds seen on it and write their features.



2018 March

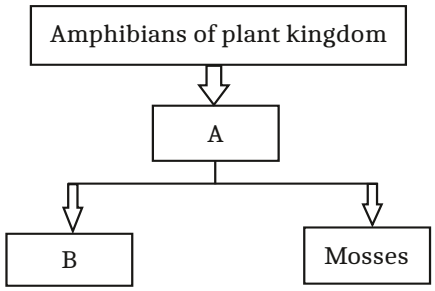
17. Match the items of column A with column B.

Column A		Column B	
a)	Prothallus	i)	Asexual bud in liverwort
b)	Protonema	ii)	Sporophyte of angiosperms
c)	Antheridium	iii)	Thalloid gametophyte of pteridophytes
d)	Gemmae	iv)	Male sex organs in bryophytes
		v)	Gametophytic stage of mosses

2018 Imp.

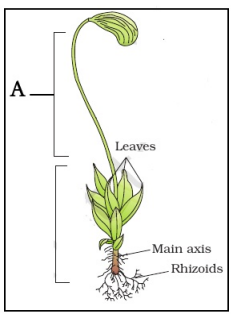
18. Write any two economic importance of bryophytes. *2018 2nd term*

19. Analyse the flow chart and find out A and B.



2019 Model

20. Observe the frgure given below. It shows two phases in the life cycle of a plant.



Identify the phase marked as A. Write any two peculiarities of this stage.

2019 March

21.Match the columns A and B

A	B
(i) Prothallus	(a) Mosses
(ii) Sporophylls	(b) Plant body of algae
(iii) Coralloid roots	(c) Gametophyte of Pteridophytes
(iv) Protonema	(d) Sporangia bearing leaves
	(e) Nitrogen fixation

2019 Imp.

22.Characters of a plant group is given below:

Occur in damp, Humid and shaded localities. Amphibians of plant kingdom.

a) Identify the plant group.

b) Why are they called "amphibians of plant kingdom"?

2019 1st term.

23.Match the following.

Type of classification	Characteristics
i) Numerical Taxonomy	a) Based on chromosome number, structure and behaviour
ii) Cytotaxonomy	b) Based on the uses and chemcial constituents of plant
	c) Carried out using computers

2019 1st term.

24.Seleginella and Salvinia are pteridophytes which show heterospory.

a) What is heterospory?

b) Give its significance. *2019 1st term.*

25.Match column I with column II

Column I	Column II
i) *Volvox*	a) Moss
ii) *Cycas*	b) Pteridophyte
iii) *Selaginella*	c) Algae
iv) *Sphagnum*	d) Gymnosperm

2019 1st term.

26.Agar is a commercial product obtained from red algae.

a) Name the two algae which can be used to produce agar.

b) Write any one use of agar. *2019 2nd term.*

27.Match the items of column A with B:

(A)	(B)
~~(a) Double fetilization~~	(i) Bryohyte
(b) Heterospory	(ii) Algae
(c) Protonema	(iii) Gymnosperm
(d) Naked seeds	(iv) Pteridophyte
	~~(v) Angiosperm~~

2020 March

28.Seleginella and Salvinia show a unique feature in spore production.

a) What is this feature?

b) Comment on its significance. *2020 Imp.*

29.Complete the table with appropriate terms :

Classes	Common Name	Major Pigments	Stored Food
Chlorophyceae	(a)	Chlorophyll a, b	(b)
(c)	Brown algae	Chlorophyll a, c Fucoxanthin	Manitol Laminarin
Rhodophyceae	Red algae	Chlorophyll a, d (d)	Floredean starch

2021 Model

30.(a) Which plants are known as 'Amphibians of the plant kingdom' ?

(b) Give reason. *2021 Model*

31.Agar is a commercial product obtained from algae.

(a) Name one alga from which agar is obtained.

(b) Write any one use of agar. *2021 Sept.*

32.Complete the table with appropriate terms :

	Classes	Common Name	Stored food
1.	Chlorophyceae	(a)	Starch
2.	(b)	Brown algae	(d)
3.	Rhodophyceae	(c)	Floridean starch

2021 Sept.

33.Name the male and female sex organs in Bryophytes. *2021 Imp.*

34.Complete the given table with appropriate terms.

Classes of algae	Common name	Stored food
Chlorophyceae	(b)	(d)
Pheophyceae	(c)	Mannitol
(a)	Red algae	Floridean starch

2021 Imp.

35.Match the following.

Volvox	Bryophyte
Pinus	Algae
Salvinia	Gymnosperm
Marchantia	Pteridophyte

2022 Model

36.Match the following:

A	B
(a) Bryophytes	(i) ~~Double Fertilisation~~
(b) Pteridophytes	(ii) Protonema
(c) Gymnosperms	(iii) Prothallus
(d) ~~Angiosperms~~	(iv) Naked seeded

2022 June

37.Complete the table:

Classes	Common Name	Stored Food
A	Green algae	B
Phaeophyceae	C	Mannitol & Laminarin
Rhodophyceae	Red algae	D

2022 Imp

38. Majority of pteridophytes are homosporous. But there are some exceptions.
a) What is heterospory ?
b) Name two pteridophytes which show heterospory. *2022 2nd term*

39. Match the following:

A		B	
a.	Red Algae	i.	Prothallus
b.	Bryophyte	ii.	Floridian starch
c.	Pteridophyte	iii.	Mycorrhiza
d.	Gymnosperm	iv.	Protonema

2022 2nd term

40. Given below are the characteristic features of Bryophytes and Gymnosperms.
Arrange them in corresponding columns.

- Lack true roots, stem or leaves.
- Naked seeded plants.
- Sporophyll form compact strobili or cones.
- Depend on water for sexualreproduction.

Bryophytes	Gymnosperms

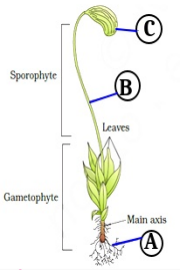
2022 2nd term

41. Match the following:

A	B
Prothallus	Mosses
Coralloid roots	Gametophyte
Floridian starch	Cycas
Protonema	Red Algae

2023 Model

42. Observe the diagram given below:
(i) Identify this bryophyte.
(ii) Label the parts A, B and C.



2023 March

43. (a) Which class of algae is commonly known as Red algae ?
(b) Name the water holding substance present in this algae. *2023 Imp*

44. What is heterospory? Comment on its significance. *2023 2nd term*

45. (a) Which plants are known as Amphibians of plant kingdom ?
(b) Give reason. *2023 2nd term*

46. (a) Which plant group is are known as amphibians of plant kingdom ?
(b) Give reasons. *2024 Model*

Answer key

1Mark Questions

1. B.Prothallus
2. Mycorrhiza
3. (a) Chlorophyceae (b) Floridean starch
4. Floridean starch
5. Mannitol
6. Bryophytes
7. a) Gemmae
8. Sporophyte
9. Red algae/Rhodophyceae
10. Antheridium
11. a) Gemmae

2 Marks Questions

1. a) Selaginella and Salvinia
   b) The development of the zygotes into young embryos take place within the female gametophytes/The female gametophytes in these plants are retained on the parent sporophytes for variable periods.
2. About half of the total carbon dioxide fixation on earth is carried out by algae through photosynthesis/they increase the level of dissolved oxygen in their immediate environment/70 species of marine algae used as food/Certain marine brown and red algae produce large amounts of hydrocolloids (water holding substances), e.g., algin (brown algae) and carrageen (red algae)/Agar, one of the commercial products obtained from Gelidium and Gracilaria are used to grow microbes and in preparations of ice-cream and jellies/Chlorella a unicellular alga rich in proteins is used as food supplement by space travellers ***(any four)***
3. a) Tracheids alone form the conducting elements in xylem *(not in the text)*
   c) Naked seeds d)Cones are seen
   e)Flowers absent
4. a) Because these plants can live in soil but are dependent on water for sexual-reproduction
5. a) Heterosporous
   b) They produce two kinds of spores, macro (large) and micro (small) spores. The megaspores and microspores germinate and give rise to female and male gametophytes respectively.
6.

A	B
a)Floridean starch	Red algae
~~b)Double fertilization~~	~~Angiosperm~~
c)Coralloid roots	Gymnosperm
d)Prothallus	Fern

7. (a) Starch (b) Fucoxanthin
   (c) Rhodophyceae (d) Floridean starch
8. Bryophytes
   plant body of bryophytes is more differentiated than that of algae/thallus-like and prostrate or erect/attached to the substratum by unicellular or multicellular rhizoids/lack true roots, stem or leaves/may possess root-like, leaf-like or stem-like structures/main plant body of the bryophyte is haploid/sex organs in bryophytes are multicellular/male sex organ is called antheridium/they produce biflagellate antherozoids/female sex organ called archegonium/archegonium is flask-shaped and produces a single egg/zygotes do not undergo reduction division immediately/they produce a multicellular body called a sporophyte/sporophyte is not free-living but attached to the photosynthetic gametophyte and derives nourishment from it/some cells of the sporophyte undergo reduction division (meiosis) to produce haploid spores/these spores germinate to produce gametophyte
   (any three)
9. They have red pigment, r-phycoerythrin in their body, The food is stored as floridean starch which is very similar to amylopectin and glycogen in structure

Answer key

10. F.ungal association in the roots of some plants is called mycorrhiza
Small specialised roots of some gymnosoerms associated with N_2-fixing cyanobacteria are called coralloid roots.

11. About half of the total carbon dioxide fixation on earth is carried out by algae through photosynthesis/they increase the level of dissolved oxygen in their immediate environment/70 species of marine algae used as food/Certain marine brown and red algae produce large amounts of hydrocolloids (water holding substances), e.g., algin (brown algae) and carrageen (red algae)/Agar, one of the commercial products obtained from Gelidium and Gracilaria are used to grow microbes and in preparations of ice-cream and jellies/Chlorella a unicellular alga rich in proteins is used as food supplement by space travellers ***(any four)***

12. Protonema is a creeping, green, branched and frequently filamentous structure which develops directly from a spore in mosses.
The spores in pteridophytes germinate to give rise to inconspicuous, small but multicellular, free-living, mostly photosynthetic thalloid gametophytes called prothallus.

13. (a) Chlorophyceae (b) Brown algae
(c) Mannitol, laminarin (d) Floridean starch

14. Heterosporous
This is a precursor to the seed habit

15. George Bentham and Joseph Dalton Hooker.
Based on natural affinities among the organisms and consider not only the external features, but also internal features, like ultra-structure, anatomy, embryology and phytochemistry

16. Marchantia
Gemmae. Green, multicellular, asexual buds, which develop in small receptacles called gemma cups located on the thalli.

17.

Column A		Column B	
a)	Prothallus	i)	Thalloid gametophyte of pteridophytes
b)	Protonema	ii)	Gametophytic stage of mosses
c)	Antheridium	iii)	Male sex organs in bryophytes
d)	Gemmae	iv)	Asexual bud in liverwort
		v)	Sporophyte of angiosperms

18. Some mosses provide food for herbaceous mammals, birds and other animals/species of Sphagnum, a moss, provide peat that have long been used as fuel, and as packing material for trans-shipment of living material because of their capacity to hold water/ mosses along with lichens decompose rocks making the substrate suitable for the growth of higher plants/mosses form dense mats on the soil, they reduce the impact of falling rain and prevent soil erosion. ***(any two)***

19. A. Bryophytes B. Liverwort

20. A. Sporophyte
The sporophyte is not free-living but attached to the photosynthetic gametophyte and derives nourishment from it/consist of a foot, seta and capsule/some cells of the sporophyte undergo reduction division (meiosis) to produce haploid spores/the capsule contains spores ***(any two)***

21.

A	B
(i) Prothallus	(c) Gametophyte of Pteridophytes
(ii) Sporophylls	(d) Sporangia bearing leaves
(iii) Coralloid roots	(e) Nitrogen fixation
(iv) Protonema	(a) Mosses

22. a) Bryophytes
b) Because these plants can live in soil but are dependent on water for sexual-reproduction

23.

Type of classification	Characteristics
i) Numerical Taxonomy	c) Carried out using computers
ii) Cytotaxonomy	a) Based on chromosome number, structure and behaviour

24. a) They produce two kinds of spores, macrospore(large) and microspore(small). The production of two types of spores is called heterospory
b) The female gametophytes in these plants are retained on the parent sporophytes for variable periods.This is a precursor to the seed habit.

25.

Column I	Column II
i) *Volvox*	c) Algae
ii) *Cycas*	d) Gymnosperm
iii) *Selaginella*	b) Pteridophyte
iv) *Sphagnum*	a) Moss

26. a) Gracilaria and Gelidium
b) used to grow microbes/used in preparations of ice-creams and jellies ***(any one)***

27.

(A)	(B)
(b) Heterospory	(iv) Pteridophyte
(c) Protonema	(i) Bryohyte
(d) Naked seeds	(iii) Gymnosperm

28. a) Heterospory
b) The female gametophytes in these plants are retained on the parent sporophytes for variable periods. This is a precursor to the seed habit

29. (a) Green algae (b) Starch
(c) Phaeophyceae (d) r-phycoerythrin

30. (a) Bryophytes
(b) These plants can live in soil but are dependent on water for sexual-reproduction.

31. (a) Gracilaria/Gelidium ***(any one)***
(b) used to grow microbes/used in preparations of ice-creams and jellies ***(any one)***

32. (a) Green algae (b) Phaeophyceae
(c) Red algae (d) Mannitol and Lamiranin

33. Male- Antheridium
Female- Archegonium

34. (a) Rhodophyceae (b) Green algae
(c) Brown algae (d) Starch

35.

Volvox	Algae
Pinus	Gymnosperm
Salvinia	Pteridophyte
Marchantia	Bryophyte

36.

A	B
(a) Bryophytes	(ii) Protonema
(b) Pteridophyte	(iii) Prothallus
(c) Gymnosperm	(iv) Naked seeded

37. A. Chlorophyceae B. Starch
C. Brown algae D. Floridian starch

38. a) The production of two types of spores, macrospore (large) and microspore(small) is called heterospory
b) Selaginella and Salvinia

39.

A	B
a. Red Algae	ii. Floridian starch
b. Bryophyte	iv. Protonema
c. Pteridophyte	i. Prothallus
d. Gymnosperm	iii. Mycorrhiza

40.

Bryophytes	Gymnosperms
• Lack true roots, stem or leaves. • Depend on water for sexual reproduction.	• Naked seeded plants. • Sporophyll form compact strobili or cones.

41.

A	B
Prothallus	Gametophyte
Coralloid roots	Cycas
Floridian starch	Red Algae
Protonema	Mosses

42. (i) Funaria
(ii) A. Rhizoids B. Seta C. Capsule

43. (a) Rhodophyceae (b) Carrageen

44. The production of two types of spores, macrospore (large) and microspore(small) is called heterospory.
The female gametophytes in these plants are retained on the parent sporophytes for variable periods. This is a precursor to the seed habit

45. (a) Bryophytes
(b) These plants can live in soil but are dependent on water for sexual-reproduction.

46. (a) Bryophytes
(b) These plants can live in soil but are dependent on water for sexual-reproduction.