

1.

select the correct statement w.r.t. gemmae

- These are specialised reproductive structures in members of thallophytes and bryophytes
- These are green, unicellular & asexual buds
- These are formed in small receptacles located on thalli
- Single Gemma forms two new individuals after germination
- These are chlorophyllous and multicellular structures
- They germinate and make monoecious thallus of Marchantia

- a, d, e and f
- b, c, d and f
- c, d and e
- b, c and f

2.

All of the following statements are concerned with gemmae, except

- Small and green structure
- Undifferentiated structure and each giving two daughter plants
- Absent in Funaria
- Multicellular structure

3.

Oogamy is associated with formation of

- Flagellated male gamete always
- motile zygote always inside the female sex organ
- Egg as female gamete
- Zygote outside the female body

4.

Double fertilisation is seen in

- Pinus
- Cycas
- Lycopodium
- Wolffia

5.

Match the following

	Algae	Stored food	Flagellation
(a)	Brown algae	(p) Floridean starch	(i) 2, lateral
(b)	Red algae	(q) Mannitol	(ii) 2-4, apical
(c)	Green algae	(r) Starch	(iii) absent

- (a-r-ii), (b-p-iii), (c-q-i)
- (a-q-i), (b-p-iii), (c-r-ii)
- (a-q-i), (b-r-ii), (c-p-iii)
- (a-q-i), (b-p-ii), (c-r-iii)

6.

Bryophytes include the various mosses and liverworts that are found commonly growing in moist shaded areas in the hills. In this group

- Always unicellular rhizoids are present
- Sexual reproduction is oogamous type
- Sporophyte is always a complete parasite
- Main plant body produces gametes by meiosis

7.

Funaria, Marchantia and Riccia plant

- Belong to Bryopsida
- Have elaters for the spore dispersal
- Show heteromorphic type of life cycle
- Are vegetatively reproducing by gemmae

8.

Most of the members of Pteridophyta

- Show diplohaplontic life cycle
- Bear strobili/cones
- Lack of both tracheids and sieve tube in vascular
- Are homosporous

9.

Mark the incorrect statement (w.r.t. gymnosperms)

- 1 Sequoia is one of the tallest tree species
- 2 Dimorphic roots, stem and leaves in pinus
- 3 Generally tap roots are present
- 4 Palmately compound leaves in Cycas

10.

Which of the following is incorrect w.r.t. red algae?

- 1 Mostly marine, greater concentration found in warmer areas
- 2 Unicellular members are not found
- 3 Sexual reproduction is only oogamous
- 4 Stored food is very similar to amylopectin and glycogen in structure

11.

The multicellular female gametophyte of the gymnospermic plants

1. Is transferred to soil at the time of fertilisation
2. Has an independent free-living existence
3. Is haploid and vascular structure
4. Is always retained within megasporangium

12.

Artificial system

1. Gave equal weightage to vegetative and sexual characteristics
2. Gave equal importance to each character and at the same hundreds of characters can be considered
3. Is based on cytological information
4. Is based on chemical constituents

13.

In mosses

1. Leafy stage of gametophyte develops directly from a spore
2. Upright, slender axis bear spirally arranged leaves
3. Rhizoids are unicellular
4. Sporophyte consists of foot and capsule only

14.

Gametophytic phase of pteridophytes is

1. An inconspicuous, small, unicelled, mostly photosynthetic, thalloid structure called prothallus
2. A small, multicelled, photosynthetic, filamentous structure called protonema
3. A small, inconspicuous, multicelled, thalloid structure called prothallus
4. A multicelled, conspicuous, photosynthetic, leafy and thalloid structure called gametophore

15.

Selaginella is said to have near approach to seed habit and considered an important step in evolution because of

1. Precocious development of gametophyte
2. Heterosporous sporangia and siphonogamous reproduction
3. Oogamous sexual reproduction
4. Formation of embryo in life cycle

16.

Photosynthetic pigments found in chlorophycean members. are

1. Chlorophyll a, b and carotenoids
2. Chlorophyll a, c and fucoxanthin
3. Chlorophyll a, d and violaxanthin
4. Chlorophyll a, b and phycobilins

17.

The type of life cycle in *Fucus* is

1. Haplontic
2. Diplontic
3. Haplo-diplontic
4. Triphasic haplobiontic

18.

Zoospores with laterally inserted heterokont flagella are found in the members of class

1. Rhodophyceae
2. Phaeophyceae
3. Chlorophyceae
4. Dinophyceae

19. Select **correct** statements w.r.t. Bryophytes
- Have independent gametophytic main plant body
 - Independent plant body is concerned with spores formation
 - Sex organs are multicellular, jacketed and always sessile
 - Sporophytic plant body develops from spore germination
 - More differentiated plant body than algae
 - Homosporous condition exists
- All are correct except (c)
 - (a), (e) and (f)
 - (a), (d), (e) and (f)
 - (b), (c), (e) and (f)
20. Vascular amphibians of plant kingdom are
- Thallophytes
 - Bryophytes
 - Pteridophytes
 - Gymnosperms
21. The adult gametophytic plant body in green moss is differentiated into
- Diploid rhizonema and chloronema
 - Primary protonema and secondary protonema
 - Foot, seta, and capsule
 - Rhizoids, main axis, and phylloids
22. The sporangium develops from group of cells in which of the following group of pteridophytes?
- Equisetum* and *Adiantum*
 - Dryopteris* and *Selaginella*
 - Dryopteris* and *Pteris*
 - Selaginella* and *Equisetum*
23. In all gymnosperms and angiosperms, the type of life cycle is
- Diplontic
 - Diplohaplontic
 - Haplontic
 - Haplo-diplontic
24. Bryophytes are also called amphibians of plant kingdom because
- Sporophyte is dependent on gametophyte
 - Zygote does not undergo meiosis immediately
 - Produce biflagellate male gametes
 - Can live in soil but depend on water for fertilization
25. Rhodophyceae members show which one of the following features?
- Characteristic colour is due to dominance of fucoxanthin
 - Asexual reproduction by zoospores is quite common
 - Absence of flagellated gametes in their life cycle
 - Sexual reproduction by isogamy, anisogamy and oogamy method
26. Brown algae differ from red algae in having
- Unicellular forms
 - Phycocolloids in their cell wall
 - Autotrophic mode of nutrition
 - Flagella
27. Choose the **wrong** statement w.r.t. seed habit of *Selaginella*
- Endospermic development of gametophytes
 - Gametophytes show precocious development
 - Formation of two types of gametophytes
 - Sporophytes are nutritionally dependent on gametophyte

28.

Phaeophycean member

- 1 Are of different colours due to variation in amount of fucoxanthin
- 2 Are used as food supplements by exobiologists
- 3 May reach to the height of 100 cm
- 4 Possess trumpet hyphae as homologous structure to phloem

29.

Most important criteria for the classification of algae is

- 1 Thallus structure
- 2 Pigmentation
- 3 Reserve feed materials
- 4 Reproduction

30.

In rhodophyceae, the mode of sexual reproduction is

- 1 Anisogamy
- 2 Oogamy
- 3 Isogamy, anisogamy and oogamy
- 4 Anisogamy and oogamy

31.

Read the following statements carefully and mark the **correct** w.r.t. gymnosperms

- a. Pollen grains are carried by air currents
 - b. Pollen tube carries the male gametes to archegonia
 - c. Ovules are exposed before fertilization but get covered after fertilization
 - d. They produce same type of spores
- 1 a, b & d
 - 2 a & b
 - 3 a & c
 - 4 b & d

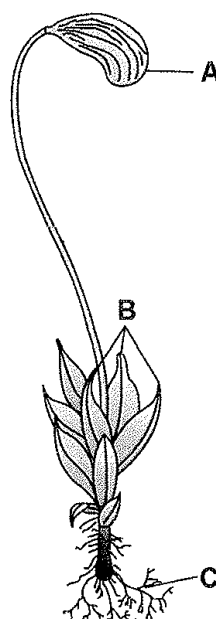
32.

Development of the zygote into embryo, taking place in female gametophytes is

- 1 An event which is precursor to seed habit
- 2 Found in all embryophytes
- 3 Observable in all gymnosperms and angiosperms
- 4 More than one option is correct

33.

Identify the structures A, B and C in the figure given below



1. A - Gametophyte; B - Leaves; C - Rhizoids
2. A - Capsule; B - Leaves; C - Rhizoids
3. A - Capsule; B - Frond; C - Rhizoids
4. A - Capsule; B - Leaves; C - Adventitious roots

34.

Creeping, green, branched and frequently filamentous green algae like stage in *Funaria*

- 1 Is called prothallus
- 2 Arises upon spore germination
- 3 Is known as gametophore
- 4 Bear gemma cups for sexual reproduction

35.

Which group of organisms are members of red algae?

- 1 *Trichodesmium*, *Porphyra*, *Chondrus*
- 2 *Gloiopeltis*, *Dictyota*, *Sargassum*
- 3 *Batrachospermum*, *Polysiphonia*, *Porphyridium*
- 4 *Gelidium*, *Gracilaria*, *Chara*

36.

Sexual reproduction is oogamous in

- 1 *Volvox* and *Fucus*
- 2 *Spirogyra* and *Ulothrix*
- 3 *Trichoderma* and *Polysiphonia*
- 4 *Batrachospermum* and *Colletotrichum*

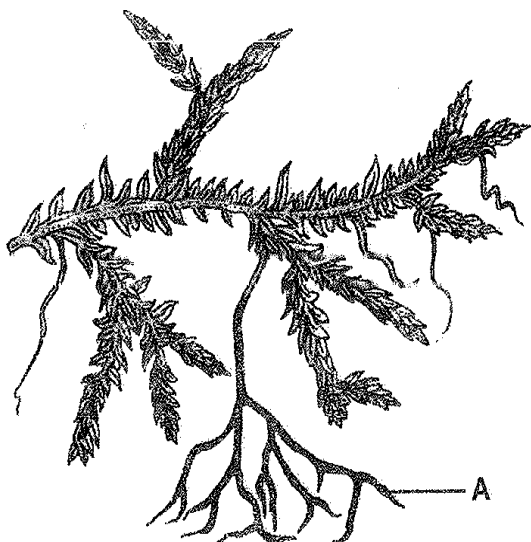
37.

Vascular archegoniates with diplontic life cycle are

- 1 Bryophytes
- 2 Pteridophytes
- 3 Gymnosperms
- 4 More than one option is correct

38.

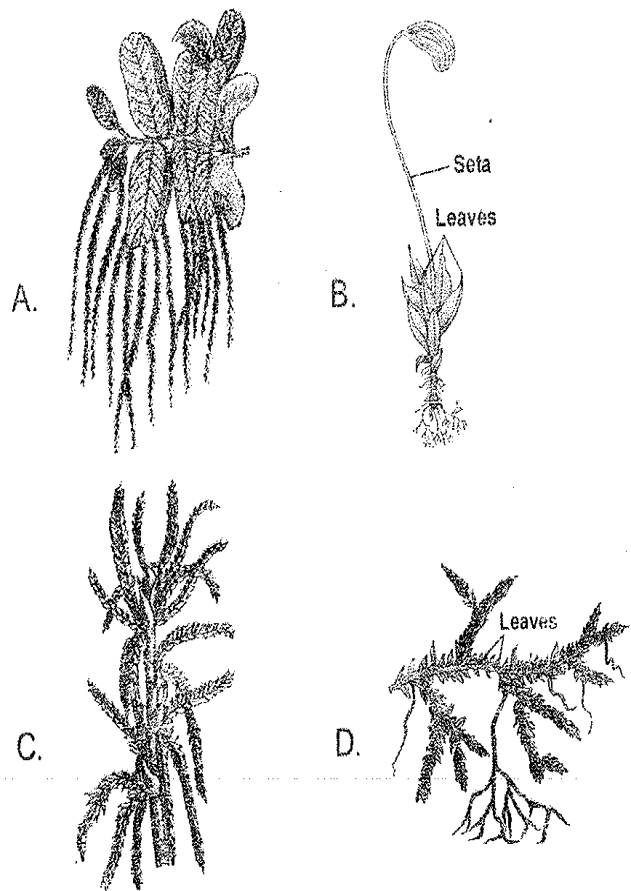
Identify the plant in a figure given below and the structure labelled A



- 1 *Equisetum*; A - Root
- 2 *Selaginella*; A - Rhizine
- 3 *Salvinia*; A - Modified leaf
- 4 *Selaginella*; A - Rhizophore

39.

Identify the diagrams A, B, C and D



A - *Sphagnum*;

B - *Funaria*;

1

C - *Salvinia*;

D - *Selaginella*;

2

A - *Selaginella*;

B - *Sphagnum*;

C - *Salvinia*;

D - *Funaria*;

3

A - *Salvinia*;

B - *Funaria*;

C - *Sphagnum*;

D - *Selaginella*;

4

A - *Pistia*

B - *Funaria*;

C - *Sphagnum*;

D - *Salvinia*;

40.

Which of the following group of plants shows free living existence of both sporophyte and gametophyte?

- 1 *Spirogyra* and *Cycas*
- 2 *Cycas* and *Selaginella*
- 3 *Dryopteris* and *Adiantum*
- 4 *Cycas* and *Ginkgo*

41.

Horsetails, mosses and ferns

- 1 Are terrestrial plants having vascular tissues
- 2 Lack archegonia
- 3 Produce parasitic gametophytes
- 4 Form gametes by mitotic division

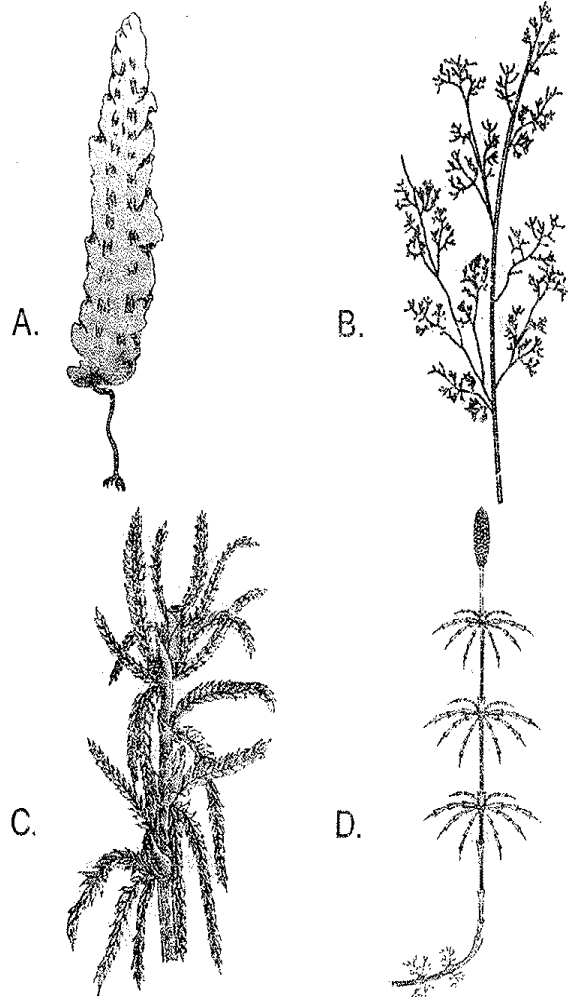
42.

Green algae differs from bryophytes in

- 1 Having gametophytic plant body
- 2 Absence of trachea
- 3 Having zooidogamy
- 4 Life cycle pattern

43.

Identify the given organisms respectively labelled as A, B, C and D



- | | | |
|---|--------------------------|---------------------------|
| 1 | A - <i>Laminaria</i> ; | B - <i>Polysiphonia</i> ; |
| | C - <i>Sphagnum</i> ; | D - <i>Equisetum</i> ; |
| 2 | A - <i>Fucus</i> ; | B - <i>Dictyota</i> ; |
| | C - <i>Polytrichum</i> ; | D - <i>Equisetum</i> ; |
| 3 | A - <i>Dictyota</i> ; | B - <i>Polysiphonia</i> ; |
| | C - <i>Sphagnum</i> ; | D - <i>Chara</i> ; |
| 4 | A - <i>Fucus</i> ; | B - <i>Polysiphonia</i> ; |
| | C - <i>Sphagnum</i> ; | D - <i>Chara</i> ; |

44. Which of the following plant group does not exhibit heterospory during the life cycle?
- 1 *Salvinia*, *Azola*, *Ginkgo*
 - 2 *Eucalyptus*, *Cedrus*, *Cycas*
 - 3 *Wolfia*, *Sequoia*, *Selaginella*
 - 4 *Dryopteris*, *Adiantum*, *Polytrichum*
45. Which of the following statement is **correct** for the artificial systems of classification?
- 1 Based on natural affinities among the organisms
 - 2 Classified the plants on the basis of morphology and phytochemistry
 - 3 Traits used in these systems are liable to change
 - 4 Based on characters like habit, colour, number and internal structure of leaves
46. Algae are chlorophyll bearing, simple, thalloid, autotrophic and largely aquatic organisms in which
- 1 The size ranges from the microscopic unicellular forms like *Chlamydomonas* to the filamentous forms like *Volvox*
 - 2 Hydrocolloids are universally present
 - 3 Thallus structure, size, and pigments are highly variable
 - 4 Major criteria of classification is cell wall
47. Members of red algae are mostly marine, occurring both at surface water and at great depths in oceans except for a few fresh water species. These algae usually
- 1 Reproduce asexually by motile spores
 - 2 Show oogamous reproduction by motile gametes
 - 3 Lack of chlorophyll-a and fucoxanthin
 - 4 Reproduce vegetatively by fragmentation
48. In heterosporous members of the pteridophyta
- 1 Development of embryo takes place within the female gametophyte
 - 2 Zygote produces a multicellular and undifferentiated sporophyte
 - 3 Gametophyte is monoecious
 - 4 Spore germination is exosporic
49. Ovules present on loose megasporophylls, unbranched stem and dicotyledonous condition are features related to
- 1 *Cycas*
 - 2 *Pinus*
 - 3 *Cedrus*
 - 4 *Ephedra*
50. Stipe, hold fast and frond are the terms associated with
- 1 *Gracilaria*
 - 2 *Polysiphonia*
 - 3 *Laminaria*
 - 4 *Chara*
51. The first cell representative of gametophytic generation is
- 1 Zygote
 - 2 Oospore
 - 3 Spore mother cell
 - 4 Spore
52. Multicelled, green, filamentous juvenile gametophyte and a mature erect leafy gametophyte are found in all, but not in
- 1 *Sphagnum*
 - 2 *Polytrichum*
 - 3 *Funaria*
 - 4 *Marchantia*

53.

Heterosporous ferns are

- 1 *Selaginella* and *Dryopteris*
- 2 *Equisetum* and *Selaginella*
- 3 *Adiantum* and *Pteris*
- 4 *Salvinia* and *Selaginella*

54.

True stem, root and leaves are present in

- 1 *Polytrichum*
- 2 *Lycopodium*
- 3 *Sphagnum*
- 4 *Pogonatum*

55.

Which of the following set of statements is **correct** for given plant?



- a. Reduce gametophytes having independent free living existence
 - b. Possess compound leaves
 - c. Form special roots having symbiotic association of prokaryotic algae
 - d. Stem shows branching
 - e. Homosporous nature
1. a, b & d
 2. a, c & d
 3. b & C
 4. b, d & e