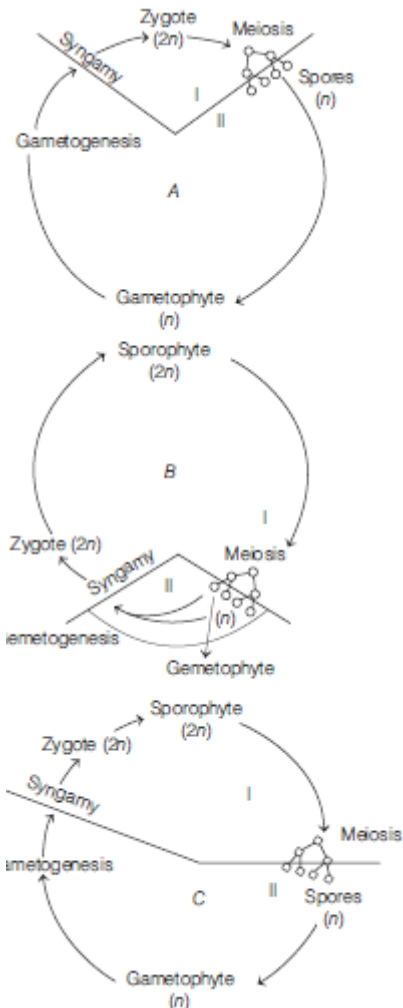


- In the alternation of generations, the sporophytic generation is ...A... and the gametophytic generation is ...B... . Here, A and B refer to
 - $A=2n$; $B=n$
 - $A=n$; $B=2n$
 - $A=n$; $B=n$
 - $A=2n$; $B=2n$
- The dominant photosynthetic, free-living phase in haplontic life cycle is
 - sporophyte
 - gametophyte
 - Both (a) and (b)
 - None of the above
- Choose the incorrect option for haplontic life cycle
 - Sporophytic generation is represented only by the one-celled zygote
 - There are no free-living sporophytes
 - Mitosis in the zygote results in the formation of haploid spores
 - The haploid spores divide mitotically and form the gametophyte
- Choose the correct option about diplontic life cycle.
 - It occurs in seed bearing plants like gymnosperms and angiosperms
 - The diploid sporophyte is dominant, photosynthetic, independent phase of the plant
 - The gametophytic, phase is represented by the single to few-celled haploid gametophyte
 - All of the above
- Haplo-diplontic life cycle is followed by
 - bryophytes and pteridophytes
 - algae and bryophytes
 - angiosperms and gymnosperms
 - bryophytes and gymnosperms
- Life cycle of *Ectocarpus* and *Fucus*, respectively are **NEET 2017**
 - haplontic, diplontic
 - diplontic, haplo-diplontic
 - haplo-diplontic, diplontic
 - haplo-diplontic, haplontic
- Which of the following correctly represents the type of life cycle patterns from the options given?



- (a) A–Haplontic, B–Diplontic, C–Haplo-diplontic

- (b) A–Diplontic, B–Haplontic, C–Haplo-diplontic
(c) A–Haplo-diplontic, B–Diplontic, C–Haplontic
(d) A–Diplontic, B–Haplo-diplontic, C–Haplontic
8. Which of the following features would distinguish a monocot from a dicot plant
(a) Aestivation (b) Vernation
(c) Phyllotaxy (d) Venation
9. Tap roots are commonly found in
(a) Gymnosperms (b) Angiosperms
(c) Dicots (d) Monocots
10. Which one of the following is commonly called a "*Maidenhair fern*"
(a) *Pteridium* (b) *Adiantum*
(c) *Dryopteris* (d) *Pteris*
11. *Pinus* seed is originated in
(a) Capsule (b) Microsporophyll
(c) Microsporangia (d) Megasporophyll
12. Microphyllous leaves are produced in
(a) Moss (b) *Selaginella*
(c) *Pteridium* (d) *Pinus*
13. Sulphur shower condition is related to
(a) Moss (b) *Selaginella*
(c) Fern (d) *Pinus*
14. Two type of cells hyaline and green or with various shades are characteristic of bryophytes in
(a) *Funaria hygrometrica*
(b) *Polytrichum commune*
(c) *Sphagnum pappillosum*
(d) *Porella pelatyphylla*
15. When the sperms of *Funaria* and *Pteris* are put together near the archegonia of *Pteris*, only the sperms of *Pteris* readily enter the archegonia and reach the egg. The reason being that
(a) Sperms of *Funaria* are killed when mixed with sperms of *Pteris*
(b) Archegonia of *Pteris* secrete a substance which repels sperms of *Funaria*
(c) Archegonia of *Pteris* secrete a chemical substance which attracts sperms of *Pteris* chemotactically
(d) Sperms of *Funaria* are less motile
16. If the number of chromosomes, in the foot of fern embryo is 8 what should be the number in its spores
(a) 4 (b) 8
(c) 16 (d) 23
17. "Monkey's puzzle" is a common name for
(a) *Araucaria embricata*
(b) *Cycas revoluta*
(c) *Pinus longifolia*
(d) *Gnetum genon*
18. Which of the following alga shows heterotrichous habit
(a) *Oedogonium* (b) *Chlamydomonas*
(c) *Ulothrix* (d) *Stigeoclonium*

19. The gametophytic generation in pteridophytes is commonly called
(a) Thallus (b) Plant body
(c) Prothallus (d) Protonema
20. With respect to the life cycle of *Pinus*, considering the formation of the female cone at the summer of year zero, fertilization occur in
(a) Late autumn of 2nd year
(b) Late spring of 2nd year
(c) The same year *i.e.* zero year but in the next season
(d) The early summer of next year (*i.e.* First year)
21. The wing of the seed of *Pinus* develops from
(a) Outer layer of the integument and basal part of the ovuliferous scale
(b) Inner layer of the integument and basal part of the ovuliferous scale
(c) Only from outer layer of the integument
(d) From ovuliferous scale
22. In the archegonium of a fern
(a) There are 4 neck canal cells
(b) There are 3 neck canal cells
(c) There is one neck canal with one nucleus
(d) There is one neck canal with two nucleus
23. Heteromorphic alternation of generations occurs in
(a) *Funaria*, *Spirogyra*, *Selaginella*
(b) *Funaria*, *Selaginella*, *Cycas*
(c) *Spirogyra*, *Rhizopus*, *Selaginella*
(d) *Rhizopus*, *Funaria*, *Spirogyra*
24. Sieve tubes of *Pinus* have sieve plates on
(a) Radial walls (b) Tangential walls
(c) Transverse walls (d) None of the above
25. In which of the following, multiciliated/multiflagelated antherozoids are present
(a) *Riccia* and *Funaria* (b) *Pteris* and *Cycas*
(c) *Riccia* and *Cycas* (d) *Marchantia* and *Riccia*
26. When the gametophyte is not formed by spores but by any other part of sporophyte, it is known as
(a) Multisporous (b) Polysporous
(c) Aposporous (d) Germination
27. A mature ligule, having a prominent basal portion, is called
(a) Trichocyst (b) Heterocyst
(c) Rhizophore (d) Glossopodium
28. A. Heterospory
B. Seed formation
C. Fertilization process
What is appropriate for gymnosperms
(a) AB true C false (b) BC true A false
(c) ABC all true (d) ABC all false
29. Number of cotyledons in *Zea*, *Cycas* and *Pinus* respectively are
(a) 1,1, many (b) 1,2,1

- (c) 1,1,1 (d) 1,2,many

30. Match items in Column I with those in Column II

Column I

Column II

- | | |
|-------------------------------|-----------------------------|
| (A) Peritrichous flagellation | (J) <i>Ginkgo</i> |
| (B) Living fossil | (K) <i>Macrocystes</i> |
| (C) Rhizophore | (L) <i>Escherichia coli</i> |
| (D) Smallest flowering plant | (M) <i>Selaginella</i> |
| (E) Largest perennial alga | (N) <i>Wolffia</i> |

Select the correct answer from the following

- (a) A – L; B – J; C – M; D – N; E – K
 (b) A – K; B – J; C – L; D – M; E – N
 (c) A – N; B – L; C – K; D – N; E – J
 (d) A – J; B – K; C – N; D – L; E – K

- (a) In the alternation of generations, the sporophytic generation is $2n$ (diploid) and the gametophytic generation is n (haploid).
- (b) In plants with haplontic life cycle, the dominant, photosynthetic phase is represented by the free-living gametophyte while sporophyte generation is represented by a single-celled zygote only.
- (c) Option (c) is incorrect. It can be corrected as Meiosis in the zygote results in the formation of haploid spores.
- (d)
- (a) Haplo-diplontic life cycle is an intermediate condition followed by bryophytes and teridophytes. In this case, sporophytic as well as gametophytic phase are multicellular.
- (c)
- (a) A–**Haplontic**–The dominant multicellular phase is gametophytic or haploid.
 B–**Diplontic**–The dominant multicellular phase is diploid or sporophytic.
 C–**Haplo-diplontic**–The gametophytic (multicellular) and sporophytic (multicellular) both phases are dominant.
- (d) In monocot parallel venation and in dicot reticulate venation is present.
- (c) In dicots tap roots and in monocots adventitious roots is present.
- (b) *Adiantum* – Maiden Hair fern (because of shining, smooth and blackish hair like petioles).
- (d) Seeds are formed after fertilization and consequent enlargement of the ovule. Two ovule or megasporangium are present on the adaxial side of ovuliferous scale. The ovuliferous scale and bracts constitute the megasporophyll.
- (b) In *Selaginella* smaller leaves are called as microphyllous leaves while bigger leaves are called as megaphyllous leaves.
- (d) Sulphur shower : In the month of May, on hills the yellow pollen grains of *Pinus* plants are produced in lot of number and are scattered in air.
- C
- (c) Because archegonia of *Pteris* secrete a chemical malic acid which attracts only sperms of *Pteris* chemotactically.

16. (a) In ferns spores are haploid hence they have half number of chromosomes where as embryo is diploid.
17. A
18. (d)Stigeoclonium shows heterotrichous habit which differentiated into prostrate and erect system.
19. (c)In ferns gametophytic generation is represented by heart shaped prothallus.
20. B
21. (a) At maturity of seed a thin layer of ovuliferous scale fuses with testa to form a wing (*i.e.*, Seeds are winged) which helps in the dispersal of seeds.
22. D
23. (b)Sporophytes and gametophytes are morphologically differ in *Funaria*, *Selaginella* and *Cycas*.
24. A
25. (b)In *Pteris* antheridium is having (about 32) multiflagellated, coiled (2 – 3 coils) antherozoids or spermatozoids.
26. (c)Apospory is the formation of gametophyte directly from sporophyte without the meiotic formation of spores.
27. (d)At the base of ligule there is present a sheath of elongated cells called glossopodium (secretory). This ligule is secretory as well as protective. It secretes water/mucilage to keep growing point of stem and young leaves moist. It also protects young leaves.
28. (c)Heterospory, seed formation and fertilization are found in gymnosperm.
29. (d)*Zea* is monocot, *Cycas* have two and *Pinus* have many cotyledons in their embryo
30. A