

**Class: 11**  
**Subject: biology**  
**Topic: Plant Kingdom**  
**No. of Questions: 20**  
**Duration: 60 Min**  
**Maximum Marks: 60**

1. Consider the following statements regarding the major pigments and stored food in the different groups of algae and select the correct options given.

I. In Chlorophyceae, the stored food material is starch and the major pigments are chlorophyll-a and d.

II. In Phaeophyceae, laminarian is the stored food and major pigments are chlorophyll-a and b.

III. In Rhodophyceae, floridean starch is the stored food and major pigments are chlorophyll-a, d and phycoerythrin.

- A. I is correct, but II and III are incorrect
- B. I and II are correct, but III is incorrect
- C. I and III are correct, but II is incorrect
- D. III is correct, but I and II are incorrect

Detailed Answer:

Group	Major pigment	Reserve Food
Chlorophyceae	Chlorophyll-a, b	Starch
Phaeophyceae	Chlorophyll-a, c	Laminarian, mannitol
Rhodophyceae	Chlorophyll-a, d	Floridean starch

Answer: D

2. Which was first photosynthetic organism?

- A. Green algae
- B. Red algae
- C. Cyanobacteria
- D. None of these

Detailed Answer:

Cyanobacteria (blue-green algae) were first photosynthetic organisms. They contain photosynthetic lamellae equivalent to thylakoids hence, these are autotrophic.

Answer: C

3. Alginic acid is found in the cell wall of

- A. Gigartina
- B. Laminaria
- C. Gelidium
- D. Scytonema

Detailed Answer:

Alginic acid or alginic acid is found in the middle lamella and primary cell walls of sea weeds such as Laminaria, Macrocystis, Ascophyllum, etc.

Answer: B

4. Of the following groups, which secrete and deposit calcium carbonate and appear like corals?

- A. Red algae
- B. Brown algae
- C. Blue-green algae
- D. All of these

Detailed Answer:

Red algae secrete and deposit calcium carbonate and appear like corals.

Answer: A

5. The thallus of Volvox is called

- A. trichome
- B. coenobium
- C. coenocyte
- D. parenchymatous

Detailed Answer:

The thallus of Volvox is hollow ball like flagellate colony. It is called as coenobium.

Answer: B

6. Vegetative reproduction in Funaria takes place by

- A. primary protonema
- B. gemmae
- C. secondary protonema
- D. All of these

Detailed Answer:

Vegetative reproduction in Funaria takes place by fragmentation of primary protonema, secondary protonema, gemmae, bulbils and apospory.

Answer: D

7. Retort cells occur in

- A. Funaria
- B. Pogonatum
- C. Porella
- D. Sphagnum

Detailed Answer:

Retort cells occur in Sphagnum.

Answer: D

8. Protonema is formed in

- A. moss
- B. liverworts
- C. ferns
- D. Cycas

Detailed Answer:

Protonema is prostrate, branched, multicellular, filamentous structure, which bears erect foliose gametophore. Protonema is produced on germination of a moss (bryophyte) spore, from which new plants develop as buds.

Answer: A

9. Bryophytes are called amphibians of plant kingdom because

- A. their reproductive phase requires water
- A. B.their sex organs are multicellular and jacketed
- B. they have tracheids
- C. All of the above

Detailed Answer:

Bryophytes are known as 'amphibians of plant kingdom' because they have adaptation to both land and water habitats. In their vegetative structure, bryophytes have become completely adapted to the land habit. However, they still depend upon water for sexual reproduction because the swimming habit is retained by their sperms.

Answer: A

10. Calyptra develops from

- A. venter wall of archegonium
- B. outgrowth of gametophyte
- C. neck wall of archegonium
- D. paraphysis of the archegonial branch

Detailed Answer:

Calyptra is a covering developed from the Venter of archegonium in bryophytes and pteridophytes. It acts as a transpiration shield around the immature capsule and provides protection to the young capsule.

Answer: A

11. 'Club moss' belongs to

- A. algae
- B. Pteridophyta
- C. fungi
- D. Bryophyta

Detailed Answer:

The club mosses (division-Lycophyta) are now limited to representatives a few centimeters in height. Their leaves are small and scale like, resembling the leaf like structures of mosses. Club mosses of the genus-Lycopodium, commonly known as ground pine, form a beautiful ground cover in some temperate coniferous and deciduous forests.

Answer: B

12. Assertion: Both apospory and apogamy are observed in Pteris.

Reason: They are evident by the production of haploid sporophyte by apospory and diploid gametophyte by apogamy.

- A. Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- B. Both Assertion and Reason are true but Reason is not the correct explanation of Assertion
- C. Assertion is true but Reason is false
- D. Both Assertion and Reason are true

Detailed Answer:

The development of diploid gametophytes from the vegetative parts of the diploid sporophyte without the intervention of spores is known as apospory. Apogamy is the development of sporophyte directly from the gametophyte without the intervention of sex organs and gametes.

Answer: C

13. Match the column I with column II and select the correct option.

Column I Column II

- A. Anthoceros 1. Walking fern  
B. Adiantum 2. Algae  
C. Sargassum 3. Inferae  
D. Prothallus 4. Gametophyte  
E. Asterales 5. Hornwort  
6. Liverwort

- A. A B C D E  
6 5 1 3 4  
B. A B C D E  
5 4 3 2 1  
C. A B C D E  
5 1 2 4 3  
D. A B C D E  
3 2 1 5 4

Detailed Answer:

Column I Column II

- Anthoceros Hornwort  
Adiantum Walking fern  
Sargassum Algae  
Prothallus Gametophyte  
AsteralesInferae

Answer: C

14. Which has vascular tissue, produces spores, but doesnot has seeds?

- A. Bryophyta  
B. Pteridophyta  
C. Gymnosperms  
D. Angiosperms

Detailed Answer:

Pteridophytesare vascular cryptogams. They generally produce spores but do not produce seeds.

Bryophytes are non-vascular but spore forming cryptogams.

Gymnosperms and angiosperms are vascular and seed forming phanerogams. All seed forming plants arealso known as spermatophytes.

Answer: B

15. Which of the following plants produces seeds but not flowers?

- A. Maize  
B. Mint  
C. Peepal  
D. Pinus

Detailed Answer:

Pinus is a gymnospermic plant. Ovulves of Pinus are uncovered, which lie on the megasporophyll, hencethis plant does not have flowers. However, it produces seeds (from ovule after fertilization) like other threepants mentioned, all of the other three are angiosperms.

Answer: D

**16.** In a monoecious plant

- A. male and female sex organs are on different individuals
- B. male and female gametes are of two morphologically distinct types
- C. male and female sex organs are on the same individual
- D. all the stamens are fused to form one unit

Detailed Answer:

A monoecious plant has both male and female reproductive organs on the same individual (plant) while dioecious plants are unisexual, having male and female reproductive organs on different individuals (plants).

Answer: C

**17.** Living fossil is

- A. Ginkgo biloba
- B. Gnetum ulva
- C. Pinus roxburghii
- D. Cycas revolute

Detailed Answer:

Ginkgo biloba is a gymnospermic plant. It is also known as living fossil because it has a great fossil history.

Answer: A

**18.** Winged pollen grains are found in

- A. Cycas
- B. Pinus
- C. Pteris
- D. Selaginella

Detailed Answer:

In Pinus, the pollen grains at maturity are protected by three layered wall, outer most exine the second exine forms two balloon like outgrowths called wings and third is intine. Wings help in transportation of pollen grain from one place to another place.

Answer: B

**19.** Which is the source of turpentine oil?

- A. Gymnospermic wood
- B. Angiospermic wood
- C. Gymnospermic seed
- D. Angiospermic seed

Detailed Answer:

Old pine (Pinus) stumps are still being distilled to some degree as a source of turpentine and resin.

Answer: A

20. In gymnosperms, the seeds are naked because they lack

- A. integument
- A. B.nucellus
- B. pericarp
- C. perianth

Detailed Answer:

After fertilization, the ovary develops into fruit and ovary wall forms the fruit wall (pericarp).

But gymnosperms have naked seeds because in gymnosperms, ovary (pericarp) is absent.

Answer: C

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