

BIOLOGY

BOOKS - MODERN PUBLISHERS BIOLOGY (HINGLISH)

PLANT KINGDOM

Practice Problems

1. Define gametic meiosis.



2. Write the imortance of phycocolloids in cell walls of brown algae.



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3. Name the male and female sex organs in Funaria. Also write the type of sexual reproduction present in Bryohytes.



- **4.** Name the following
- (a) Edible brown alga
- (b) Source of Iodine.
- (c) Source of alginic acid.



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5. What is agar agar?



6. What are the uses of algin?



7. Mosses and ferns are found in moist and shady places because both



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8. LIVERWORTS



9. What is isogamy?



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10. How are vascular plants able to dominate the planet?



11. Write any three similarities between moss and fern.



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12. What are kelps?



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13. What is living fossils? Give two examples.



Ncert File Exercise Questions

1. What is the basic of classification of algae?



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2. When and where does reduction division take place in the life cycle of a liverwort, a moss, a fern, a gymnosperm and an angiosperm?



3. Name three groups of plants that bear archegonia. Briefly describe the life cycle of any one of them.



4. Mention the ploidy of the following: 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, and zygote of a fern.



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5. Write a note on economic importance of algae and gymnosperms.



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6. Both gymnosperms and angiosperms bear seeds, then why are they classified separately?

7. What is heterospory? Briefly comment on its significance. Give two examples.



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8. Explain briefly the following term with suitable example:-

(i) protonema

(ii) antheridium

- (iii) archegonium
- (iv) diplontic
- (v) sporophyll
- (vi) isogamy



- **9.** Differentiate between the following:-
- (i) red algae and brown algae
- (ii) liverworts and moss
- (iii) homosporous and heterosporous

pteridophyte

(iv) syngamy and triple fusion



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10. How would you distinguish monocots from dicots ?



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Ncert File Exemplar Problems A Multiple Choice Questions

A. Protista

B. Plantae

C. Monera

D. Algae

Answer: A



2. Fusion of two gametes which are dissimilar in size is termed as

A. Oogamy

B. Isogamy

C. Anisogamy

D. Zoogamy

Answer: C



3. Holdfast, stipe and frond constitutes the plant body in case of

A. Rhodophyceae

B. Chlorophyceae

C. Phaeophyceae

D. All of the above

Answer: C



4. A plant shows thallus level of organization. It shows rhizoids and is haploid. It needs water to complte its life cycle because the male gametes are motile. Identify the group to which it belongs to

- A. Pteridophytes
- B. Gymnosperms
- C. Monocots
- D. Bryophytes

Answer: D

5. A prothallus is

- A. A structure in pteridophytes formed before the thallus develops
- B. A sporophytic free living structure formed in pteridophytes
- C. A gametophyte free living structure formed in pteridophytes

D. A primitive structure formed after fertilization in pteridophytes

Answer: C



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6. Plants of this group are diploid and well adapted to extreme conditions. They grow bearing sporophylls in compact structures called cones. The group in reference is

- A. Monocots
- B. Dicots
- C. Pteridophytes
- D. Gymnosperms

Answer: B



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7. The embryo sac of an angiosperms is made up of

- A. 8 cells
- B. 7 cells and 8 nuclei
- C. 8 nuclei
- D. 7 cells and 7 nuclei

Answer: B



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8. If the diploid number of a flowring plant is 36. what would be the chromosome number in its endosperm

- A. 36
- B. 18
- C. 54
- D. 72

Answer: C



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9. Protonema is

A. Haploid and is found in mosses

- B. Diploid and is found in liverworts
- C. Diploid and is found in pteridophytes
- D. Haploid and is found in pteridophytes

Answer: A



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10. The giant redwood tree (Sequoia sempervirens) is a/an

A. Angiosperm

- B. Free fern
- C. Pteridophyte
- D. Gymnosperm

Answer: C



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Ncert File B Very Short Answer Type Questions

1. Food is stored as floeidean starch in Rhodophyceae. Mannitol is the reserve food

material of which group of algae?



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- 2. Give an example of plants with
- (a)haplontic life cycle
- (b) diplontic lify cycle
- (c) halpo diplontic life cycle



3. The plant body in higher plants is well differentiated and well developed. Roots are the organs used for the purpose of absorption. What is the equivalent of roots in the less developed lower plants?



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4. Most algal genera show haplontic life style.

Name an algae which is (a) Haplo diplontic (b)

Diplontic



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5. In bryophytes, male and female sex organs are called as and



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Ncert File C Short Answer Type Questions

1. Why bryophytes are called amphibians of the plant kingdom?



2. The male and female reporductive organs of several pteerodphytes and gumonosperms are comparable to floral structures of angiosperms. Make and attempt to compare the various reproductive parts of pteridophytes and gymnosperms with reproductive structure of angiosperms.



3. Heteropory, i.e., formation of two types of spores-microspores and megaspores is a characteristic feature in the life cycle of a few members of pteridophytes and all spermatophtes. Do you think heterospory has some evolutionary significance in plant kingdom?



4. How far does Selaginellla one of the living members of Lycopodiales (pteridophytes) fall short of seed habit?



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5. Each plant or group of plants has some phylogenetic significance in relation to evolution Cycas, one of the few living members of gymnosperms is called as the 'relic of past'. Can you establish a phylogenetic relationship

of Cycas with any other group of plants that justifies the above statement?



6. The heterosporous pteridophyte show certain characteristics, which are precursor to the seed habit in gymnosperms. Explain



7. Comment of the life cycle and nature of a fern prothallus.



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8. How are the male and female gametophytes of pteridophytes and gymnosperms different from each other?



9. In which plant will you look for mycorrhiza and corolloid roots? Aslo explain what these terms mean



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Ncert File D Long Answer Type Questions

1. Gametophyte is a dominant phase in the life cycle of a bryophyte. Explain.



2. Which the help of a schematic diagram describe the haplo diptontic life cycle pattern of a plant group.



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3. 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 form

- each other
- (a) Both will survive and grow normally and independent from each other.
- (b) Both will die
- (c) Algal component will survive while the fungal component will die.
- (d) Fungal component will survive while algal pattern will die.



4. Explain why sexual reproduction in angiosperms is said to take place through double fertilization and triple fusion. Also draw a labelled diagram of embryo sac to explain the phenomena.



- 5. Draw labelled diagrams of
- (a) Female and male thallus of a liverwort.

- (b) Gametophyte and sporophyte of Funaria.
- (c) Alternation of geneation in angiosperm



Hots Higher Order Thinking Skills Very Short **Answer Questions**

1. What are dimorpohic leaves ?



2. Define circinate ptyxis .



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3. What are sporophylls?



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4. Name a plant which is called living fossil.



5. Name the female gametophyte in angiosperms.



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6. (a) What is peat? How is it formed?

(b) What is its economic importance?



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7. What is hynospore?



8. Define siphonegamy.



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9. ENDOSPERM



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10. What is frond?



11. Which type of ovules are present in gymnosperms?



12. Which green alga is used by space travellers as protein rich food?



13. Name the algae where food is stored in the form of laminarian.



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Hots Higher Order Thinking Skills Short Answer Questions

1. Give one example each of Chlorophyceae Phaeophyceae and Rhodophyceae .



2. Why vascular plants dominate the land?

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3. Which type of pigments are found in red algae?



4. Name the pigments present in red algae.



5. Name some algae which are used as food.



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6. Why mosses are considered ecologically important?



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7. Which event has been considered important in pteridophyte for evolution of seed habit?



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8. Define Numerical Taxonomy



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9. Write about formation of primary endosperm nucleus.



10. WHAT IS DOUBLE FERTILIZATION



11. What is the advantage of development of seed habit in seed plants



12. Bryophytes differ from pteridophytes in



13. Describe some distinguishing features of mosses.



14. Differentiate between antheridia and archegonia.



15. What are diplontic and haplontic life cycles?



16. Write briefly about sporophyte of bryophytes.



Quick Memory Test A Say True Of False Write True Or False

1. Ferns are mostly found in dry climate.



2. True indusium is present in Pteris.



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3. Group of sporagia is called sorus .



4. In protostele there is no pith in the centre.



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5. The leaves of ferns are microphyllous.



6. The sori bearing leaves of are called sporophylls.



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7. The stele of Dryopteris is dictyostelel.



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8. The fern is heterosporous .



9. Megaspore on germination produces female gametophyte.



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10. In Selaginella gametophyte is dominant generation .



11. In Selaginella sperms are multiflagellated.



12. Rhizophore of Selaginella is organ suigeneris.



13. In precious germination the spore germinates while still in the sporangium.

14. Formation of gametophyte from sporophyte without production of spores is called apospory .



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15. Biciliate antherozoids are found in ferns.



16. In ferns there is self fertilization.



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Quick Memory Test B Complete The Missing Links

1. The yellow or brown spots which have sporangia in ferns are called



2. Cones represent the Organs in the gymnosperms.



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4. The Are root like structures which help in anchorage and absorption of water in bryophytes .



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Quick Memory Test B Fill The Following Sentences With The Suitable Word





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3. In pteridophytes branching is never



4. Green algae are considered of all terrestrial plants .



5. In red algae reserve food material isstarch.



6. Male gametes in red algae are called



7. From red alga is used in the preparation of chocolate .



8. Brown algae contains dominating pigment

•••••



9. Pleurilocular sporangia in Ectocarpus contain which are formed without meiosis .



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10. a green alga causes a disease on tea .



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11. Sphagnum has absorptive power and Properties .



12. In Funaria spore germinates to give rise to



13. Ferns contain underground stem called



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Quick Memory Test C Choose The Correct **Alternative**

1. In anisogamy / oogamy the female gamete is bigger passive non - motile and laden with food.



2. In rhodophyceae there is predominance of pigment r - phycoerythrin / phycocyanin.



3. The gametophyte / sporophyte bear antheridia and archegonia.



4. In pteridophytes plant rhizoids / roots are present .



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5. Prothallus of fern in haploid / diploid .



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6. Hypnospores are thin walled / thich walled resting spores .



Revision Exercises Very Short Answer Questions

1. Name any red alga which is used as vegetable.



2. Which type of flagella are present in brown algae ?



3. Name the alga from which algin is prepared commercially.



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4. Name any branched filamentous green alga.



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5. In which alga sexual reproduction takes place by conjugation?



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6. Name a plant where rhizoids are multicellular branched and obiquely septate.



7. In which bryophyte sprogonium is embedded in thallus?



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8. Name the filamentous structure which appears in mosses due to germination of spore.



9. What is the specific term for cluster of sporangia in Dryopteris?



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10. Where the antheridia and archegonia are located in fern?



11. Name the membranous covering protecting the sporangia in Dryopteris .



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12. Why plant body of Dryopteris is called sporophyte?



13. Why are hairy structures present on young leaves and petiole in a fern?



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14. How many generations are represented in pinus seed ?



15. How many cotyledons are present in Pinus embryo ?



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16. Give an example of a plant which produces seed but not fruit .



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17. Name the smallest angiosperm.



18. What is the genetic constitution of endosperm in angiosperms?



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19. Read the following statements and select the correct statements from the given choices

(i) Methanogens are present in the guts of

ruminant animals. (ii) Mycoplasma has distinact cell wall (iii) Viroids are infectious naked DNA molecules (iv) Algal component of lichen is phycobiont. A. (ii) and (iii) B. (i) and (iv) C. (i) and (iiii) D. (ii) and (iv) Answer: (i) and (iv)

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Revision Exercises Short Answer Questions

1. What do you understand by naked DNA?



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2. What is water bloom?



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3. What is mixotrophic mode of nutrition?
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4. Why the seed plants are most successful of
all land plants ?
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5. What is algin ?
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6. What are coralloid roots?

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7. Name the largest unicellular alga.



8. What is polyembryony?



9. How would you identify the gametophytic plant body of liverwort.



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10. What is heterospory?



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11. Algae are useful to main in a variety of ways

. Suggest four uses of algae .

12. Distinguish between crytogamae and phanerogamae.



13. Draw a sketch of unicellular non flagellated member of algae.



14. List common modes of reproduction in algae.



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15. Explain briefly alternation of generations in bryophytes .



16. Describe the main features of pteridophytes .



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17. Name the four classes of pteridophytes.



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18. Explain the nature of sporophylls in pteridophytes.



19. Describe the important characteristics of gymnosperms.



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Revision Exercises Long Nswer Questions

1. How are the delicate and soft fungal hyphae able to penetrate hard timebers?

2. What characters of seed plants make them specially adapted to life on land?



3. List the events from pollination to fertilization in Pinus .



4. Draw diagrammatic representation of life cycle of Dryopteris .



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5. Describe the group characteristics and basic features of bryophytes . Define thallus rhizoid and protonema .



6. Draw the diagrammatic life cycle of an angiosperm.



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7. Give an account of double fertilization angiosperms.



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Competition File Objective Type Questions A **Multiple Choice Questions Mcqs**

- 1. Yellow-green pigment is found in
 - A. Xanthophyta
 - B. Chlorophyta
 - C. Phaeophyta
 - D. Rhodophyta

Answer: A



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- A. Chara
- B. Porphyra
- C. Fucus
- D. Gracillaria

Answer: A



3. Which one of the following has haplontic life cycle

- A. Funaria
- B. Polytrichum
- C. Ustilago
- D. Wheat

Answer: C



4. Which one of the following plants is monoecious

A. Marchantia

B. Pinus

C. Cycas

D. Papaya

Answer: B



5. Which one is the wrong pairing for the disease and its causal organism

A. Late blight of potatoi - Alternaria solani

B. Black rust of wheat - Puccinia graminis

C. Loose smut of wheat - Ustilago nuda

D. Root - knot of vegetables - Meloidogyne sp.

Answer: A



6. Which one of the following is a vascular cryptogam?

A. Equisetum

B. Ginkgo

C. Marchantia

D. Cedrus

Answer: A



7. Which one of the following is considered important in the development of seed habitOr

Seloginella has the character of evolutionary importance. That character is

- A. Dependent sporophyte
- B. Heterospory
- C. Haplontic life cycle
- D. Free living gametophyte

Answer: B

8. Lichens show symbiotic relationships between

A. Algae and bacteria

B. Fungi and higher plants

C. Algae and fungi

D. Viruses and bacteria

Answer: C



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9. Which of the following are commonly known as imperfect fungi .

A. Ascomycetes

B. Basidiomycets

C. Deuteromycetes

D. Phycomycetes

Answer: C



10. Cell in some filamentous cyanobacteria which is specialised for nitrogen fixation is called:

A. Heterocyst

B. Mesosome

C. Volutin

D. Phycobillisome

Answer: A



11. A plant disease in which the pathogen is seen as a cottony growth on the surface of host is called

A. Downy mildew

B. Powdry mildew

C. Smut

D. Rust

Answer: B



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12. Red algae differs from green and brown algae in

A. No chlorophyll a

B. No differentiated cells

C. No flagellated stage in their life cycle

D. Haemoglobin within their cells

Answer: C



13. Protein rich alga is:

- A. Protosiphon
- B. Porophyridium
- C. Gelidium
- D. Spirulina

Answer: D



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14. Which of the following is an unicellular sacfungus

- A. Claviceps
- B. Saccharomyces
- C. Penicillium
- D. Neurospora

Answer: B



15. Which of the following is not matched correctly

- A. Anabaena Cyanobacteria
- B. Amoeba Protozoa
- C. Gonyaulax Dinoflagellates
- D. Albugo Chrysophytes

Answer:



16. Which one of the following is a characteristic feature of Chrysophytes

A. They are parasitic forms which cause diseases in animals

B. They have a protein rich layer called pellicle

C. They have indestructible wall layer deposited with silica

D. They are commonly called dinoflagellates

Answer: C

17. Which of the following does not belong to the kingdom Protista

A. Chrysophytes

B. Euglenoids

C. Ascomycetes

D. Dinoflagellates

Answer: C



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18. Find out the correct statement :

A. In lichens the algal component is called phycobiont and fungal component is known as mycobiont which are heterotrophic and autotrophic respectively.

B. Viroid contains RNA of low molecular weight and protein coat .

- C. A virus contains both RNA and DNA.
- D. Viruses are obligatory parasites .

Answer: D



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19. Select the correct match from the options

given below

Phaeophyceae – Mannitol

Rhodophyceae – Dictyota

Chlorophyceae – Non-motile gametes

Rhodophyceae -r - Phycoerythrin

- A. A,B and C
- B. B, C and D
- C. A and C
- D. A and D

Answer:



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20. Which of the following Pteridophytes belong to class Pteropsida

- A. Equisetum and Psilotum
- B. Lycopodium and adiantum
- C. selaginella and Pteris
- D. Pteris and Adiantum

Answer: D



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21. Selaginella and Salvinia are considered to represent a significant step toward evolution of seed habit because

- A. Megaspores possess endosperm and embryo surrounded by seed coat
- B. Embryo develops in female gametophyte which is retained on parent sporophyte
- C. Female gametophyte is free and gets disperesed like seeds
- D. Female gametophyte lacks archegonia

Answer: B



- **22.** Consider the following four statements whether they are correct or wrong.
- (A) The sporophyte in liverworts is more elaborate than that in mosses.
- (B) Salvinia is heterosporous.
- (C) The life cycle in all seed-bearing plants is diplontic.
- (D) In Pinus, male and female cones are borne on different trees.

The two wrong statements together are

A. Statement (B) and (C)

- B. Statements (A) and (B)
- C. Statements (A) and (C)
- D. Statements (A) and (D)



- 23. The major pigments in rhodopycase are
 - A. Chlorophyll a and b
 - B. Chlorophyll a,c and fucoxanthin

- C. Chlorophyll a, d and phycoerytherin
- D. None of the above .

Answer: C



- **24.** The largest antherozoids are found in :
 - A. Cycas
 - B. Cedrus
 - C. Ephedra

D. Pinus

Answer: A



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25. Bryophytes are called amphibians of plant kingdom because

A. They need a layer of water for reproduction

B. They are found in mostly aquatic condition

C. They have vascular tissues

D. All of these.

Answer: A



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26. Read the following five statements (A-E) and answer as asked next to them (A) In Equisetum the female gametophyte is retained on the parent sporphyte (A) In Equisetum the female gametophyte is retained on the parent sporophyte (B) In ginkgo male gametophyte is not independent (C) Sexual reproduction in Volvox is isogamous (E) The spores of slime moulds lack cell walls How many of the above statements are correct A. Two B. Three C. Four

D. One

Answer: D



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27. Which one of the following pairs is wrongly matched

A. Ginkgo - Archegonia

B. Salvinia -Prothallus

C. Viroids - RNA

D. Mustard - Synergids

Answer: B



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28. In the five - kingdom classification
Chlamydomonas and Chlorella have been included in

A. Protista

B. Algae

- C. Plantae
- D. Monera

Answer: A



- **29.** The heterosporous pteridophyte belonging to class lycopsida is
 - A. Selaginella
 - B. Psilotum

C. Equisetum

D. Pteris

Answer: A



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30. Consider the following statements with respect to algae

A. Fusion between one large, non-motile female gemale and a smaller, motile male gemete is termed as oogamous

B. Fusion of two gemetes dissimilar in size is termed as isogamous

C. Fusion of two gemetes similar in size is called anisogamous

D. In chlorophyceae the major pigments are chlorophyll a and b, and the food is stored as starch

(E. In rhodophyceae the major pigments are chlorophyll a and d and the food is stored as mannitol.

A. A and E alone are correct

B. C and E alone are correct

- C. A and B alone are correct
- D. A and D alone are correct



- **31.** Consider the following statements with respect to gymnoperms and angiosperms
- A. Doulbe fertilization is an event unique to gymnosperms
- B. Angiosperms range in size from

microscopic, Wolfia to tal trees of Sequola C. In gymnoperms the seeds are not covered D. In gymnoperms the male and female gametophytes have an independent free living existence. Of the above statements A. A and B alone are correct B. C alone is correct C. B and C alone are correct D. C and D alone are correct Answer: B

32. Choose the correct order of colours with respect to pigments, chlorophyll,phycoerythrin and fucoxanthin

- A. Green red and brown
- B. Brown green and Red
- C. Red green and brown
- D. Green brown and red

Answer: A

- **33.** Which of the following are the characters of dinoflagellates
- A. Planktonic golden yellow alage with soap box like structure
- B. Marine red biflagellated protista
- C. Appear yellow, green, brown, blue and red in colour
- D. Biflagellated organisms with pellicle
- E. Saprophytic (or) parasitic unicellular forms

- A. A, B and C only
- B. B, D and E only
- C. B and C only
- D. B and E only

Answer: C



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34. The green alga rich in proteins used as food supplements even by space travellers is:

- A. Chlamydomonas
- B. Volvox
- C. Spirogyra
- D. Spirulina



35. Consider the following statements with respect to haracteristic features of the kingdom

of the above statements Aln animalia the mode of nutrition is autotrophic B In monera the nuclear membrane is present C In protista the cell type is prokaryotic D In plantae the cell wall is present A. A alone is correct B. B alone is correct C. C alone is correct D. D alone is correct Answer: D

36. Isogamous condition with non-flagellated gametes is found in

A. Spirogyra

B. Volvox

C. Fucus

D. Chlamydomonas

Answer: A



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37. Monoecious plant of Chara shows occurrence of

A. Stamen and carpel of the same plant

B. upper antheridium and lower oogonium

on the same plant

C. upper oogonium and lower antheridium

on the same plant

D. antheridiophore and archegoniophore on the same plant

Answer: C



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fametophytes are free living

38. Read the following statement (A-E) and answer the equestion which follows them(A) In liverworts, mosses and fems

(B) Gymnospers and some ferms are

heterosphorous
(C) Sexual reproduction if Fucus, Volvox and
Allbugo is oogamous
(D) The sporophyte in liverworts is more
elaborate than that in mosses
(E) Both, Pinus and Marchantia are dioecious
How many of the above statements are correct
A. Two
B. Three
C. Four
D. One

Answer: B



- **39.** Which of the following are likely to the present to be present in deep sea water?
 - A. Eubacteria
 - B. Blue -green algae
 - C. Saprophytic fungi
 - D. Archaebacteria



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40. Meiosis takes place in

A. Conidia

B. Gemmule

C. Megaspore

D. Meiocyte

Answer: D



41. The following plant placed under dicots but lacks cotyledone is :

A. Maize

B. Cuscuta

C. Mustard

D. Linseed

Answer: B



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42. Which one of the following is wrong about Chara

A. Upper oogonium and lower round antheridium

B. Globule and nuculew present on the same plant

C. Upper antheridium and lower oogonium

D. Globule is male reproductive structure

Answer: C



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43. Anoxygenic photosynthesis is characteristic of

- A. Rhodospirillium
- B. Spirogyra
- C. Chlamydomonas
- D. Ulva

Answer: A



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44. In which one of the following processes

 CO_2 is not released

- A. Aerobic respiration in plants
- B. Aerobic respiration in animals
- C. Alcoholic fermentation
- D. Lactate fermentation



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45. Which of the following is responsible for peat formation?

- A. Marchantia
- B. Ricacia
- C. Funaria
- D. Sphagnum.



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46. Which one of the following shows isogamy with non-flagellated gametes

- A. Sargassum
- **B.** Ectocarisms
- C. Ulothrix
- D. Spirogyra



- **47.** Which one of the following living organisms completely lacks a cell wall
 - A. Cyanobacteria
 - B. Sea -fan (Gorgonia)
 - C. Saccharomyces
 - D. Blue green algae.

Answer: B



- **48.** Which of the following fungi contains hallucinogens
 - A. Morchella escuenta
 - B. Amanita muscaria
 - C. Neurospora sp
 - D. Ustilagago sp.

Answer: C



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49. Male gametophyte with least number of cells is present in

A. Pteris

B. Funaria

C. Lilium

D. Pinus

Answer: C



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50. An alga which can be employed as food for humna being is

- A. Ulothrix
- B. Chlorella
- C. Spirogyra
- D. Polysiphonia.

Answer: B



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51. In angiosperms during development of embryo, the suspensor cell develops from

- A. Oospore
- B. Integument
- C. Endosperm
- D. Cotyledon

Answer: A



- **52.** The gymnospermic endosperms differs form an angiospermic endosperm because in gymnosperms it is
 - A. Haploid and developed from female gametophyte
 - B. Diploid and developed from female gametophyte

- C. Triploid and developed after fertilisation
- D. Triploid and developed before fertilisation

Answer: A



- **53.** Which is not a Bryophyte?
 - A. Hepaticopsida
 - B. Anthoceropsida

- C. Bryopsida
- D. Lycopsida

Answer: D



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54. This provides brown colour to algae

- A. Chlorophylla
- B. Phuycocyanin
- C. Fucoxanthin

D. Chlorophyll b

Answer: C



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55. Which one is a red alga

- A. Gelidium
- B. Chlorella
- C. Volvox
- D. Ulothrix

Answer: A



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- **56.** Male gametophyte in angiosperms produces:
 - A. Single sperm and two vegetative cells
 - B. Three sperms
 - C. Two sperms and a vegetative cell
 - D. Single sperm and a vegetative cell

Answer: C



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57. Which one is wrong statement?

A. Haploid endosperm is typical feature of Gymnosperms.

B. Brown algae have chlorophyll a and c and fucoxanthin.

C. Archegonia are found in Bryophyll

Pteridphyte and Gymnosperms .

D. Mucor has biflagellate zoospore

Answer: D



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58. Microtubules are the constituents of

A. Cilia flagella and peroxisomes

B. Spindle fibres centrioles and cilia

- C. Centrioles spindle fibres and chromatin
- D. Centrosome nuclesome and centrioles

Answer: B



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59. In bryophytes and pteridophytes, transport of male gamete require :

A. Wind

B. Birds

- C. Insects
- D. Animalia

Answer: D



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60. Chrysophytes, Euglenoids, Dinoflagellates and Slime moulds are included in the kingdom

- A. Monera
- B. Protista

- C. Fungi
- D. Animalia

Answer: B



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- **61.** Mycorrhiza is the example of :
 - A. Amensalism
 - B. Antibiosis
 - C. Mutualism

D. Fungistasis

Answer: C



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62. Select the mismatch

- A. Cycas Dioecious
- B. Salvinia Heterosporous
- C. Equisetum -Homosporous
- D. Pinus -Dioecious

Answer: D



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- **63.** Which of the following is correctly matched for the product produced by them?
 - A. Methanobacterium Lactic acid
 - B. Penicillium notatum Acetic acid
 - C. Sacharomyces cerevisiae -Ethanol
 - D. Acetobacter aceti Anitbiotics

Answer: C



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64. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to plants as well as animals and can survive without oxygen?

- A. Pseudomonas
- B. Mycoplasma
- C. Nostoc

D. Bacillus

Answer: B



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65. An example of colonial alga is

A. Volvox

B. Ulothrix

C. Spirogyra

D. Chlorella

Answer: A



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66. Life cycle of Ectocarpus and Fucus respectivley are

- A. Diplontic , haplodiplontic
- B. Haplodiplontic diplontic
- C. Haplodiplontic, haplontic
- D. Haplontic, diplontic

Answer: B



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67. After karyogamy followed by meiosis, spres are produced exogenously in

- A. Alternaria
- B. Agaricus
- C. Neurospora
- D. Saccharomyces

Answer: B



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68. Which one is wrongly matched

- A. Biflagellate zoospores Brown algae
- B. Gemma cups Marchantia
- C. Uniflagellate gametes Polysiphonia
- D. Unicellular organism Chlorella

Answer: C

69. Which of the following organisms are known as chief producers in the oceans?

A. Diatoms

B. Cyanobacteria

C. Dinoflagellates

D. Euglenoids

Answer: A



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70. Which of the following statements is correct?

A. Selaginella is heterosporous while salvinia is homosporous .

B. Horsetails are gymnosperms.

C. Ovules are not enclosed by ovary wall in gymnosperms

D. Stems are usually unbranched in both cycas and cedrus .

Answer: A



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71. Select the wrong statement

- A. Mushrooms belong to Basidiomycetes .
- B. Pseudopodia are locomotory and feeding structures in sporozoans .

C. Cell wall is present in members of Fungi and Plantae

D. Mitochondria are the powerhouse of the cell in all kingdoms except Monera.

Answer: B



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72. Winged pollen grains are present in

A. Cycas

- B. Mango
- C. Mustard
- D. Pinus

Answer: D



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Competition File Objective Type Questions B
Cbse Pmt Main Examination Question

1. Fucus and Sargassum both shows heterothallic habit.



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2. Auxospores are found in diatom.



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3. Viruses are more abundant in marine habit.



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4. All plant infecting bacteria are gram positive and rod shaped .



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5. Red algae occurs both in marine and fresh water.



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6. Marsilea salvinia azolla are aquatic eusporangiate and heterosporous.



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7. All bacteria have single circular chromosome per cell.



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8. All desmids are found in marine habitat but diatoms are found as phytoplankton large in deep lakes .



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9. Welwitschia has reproductive structure in its juvenile stage .



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10. Moss shows diplobiontic life cycle.



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11. (A) Identify the given figure and label parts (A) and (B)



(b) Identify the given diagram and label parts

(C) and (D)

(C) Identify the given diagram and label parts

(E)

(e) Identify the shown part and name the organism and lable (F) and (G) .



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12. (i) Identify the given diagram and label (a) or (b):



(ii) Identify the given diagram and label (c) or (d):





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13. [Extinct, North-western, Tropical, Fig, Ficus, Glomus, Northern, Southern, Pinus, Diversity , Ustilago , Rust, Smut, Staphylococcus, Flemming, Azospirillum, Pasteur, Selaginella, Chara] (a) In (1) areas (2) Acts as keystone species. (b) The species those are (3) in (4) parts of India are due to Jhoon cultivation. (c) Loose (5) in wheat is caused by

(6)
(d) (7) could not grow on
penicillium containing culture it was first
observed by (8)
(e) Beside Polytrichum and (9)
female sex organ archegonia are also present
in (10)



Competition File Objective Type Questions B
Cbse Pmt Main Examination Question Fill In The
Blanks

- 1. Cycas pinus Coralloid root Vivipary

 Anabaena Nostoc Marsilea Usnea Oscillatoria

 Pneumatophore Eichhorina.



2. Cycas pinus Coralloid root Vivipary

Anabaena Nostoc Marsilea Usnea Oscillatoria

Pneumatophore Eichhorina.

(i) Is present in Rhizophyora . It also shows



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3. Cycas pinus Coralloid root Vivipary Anabaena Nostoc Marsilea Usnea Oscillatoria

Pneumatophore Eichhorina.

(iii) Is an aquatic pteridophyte and

...... Is an aquatic angiosperm.



4. Cycas pinus Coralloid root Vivipary Anabaena Nostoc Marsilea Usnea Oscillatoria Pneumatophore Eichhorina.

(iv) Heterocyst is found in



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Competition File D Assertion Type Questions

1. These question consist of two statements each printed as Assertion and Reason. While answering these questions you are required to

choose any one of the following four responses:

Assertion: Cyanobacteria is new name for Myxophyceae or blue green algae.

Reason : Brown alge is new name for Chorophyceae .

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

but Reason is not a corret explanation of

B. If both Assertion and Reason are true

the Assertion.

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: C



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2. These question consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four

responses:

Assertion: Red tide is casued by Gonyaulax.

Reason: Gonyaulax is marine dinoflagellate.

The accumulate in sea to provide colour and cause the red tide .

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: A



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3. These question consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses:

Assertion: Bioluminescence is exhibited by Entamoeba.

Reason: Bioluminescence is the emission of high temperature by living beings.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of

the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: D



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4. These question consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses: Assertion: Algae are characterized by multicellular sex organs in which every cell

forms the gamete.

Reason: Sexual reproduction in algae is only of oogamous type.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: D



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5. Assertion (A): Many visitors to the hills suffer from skin and respiratory allergy problems.

Reason (R): Conifer trees produce a large quantity of wind- borne pollen grains.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false .

Answer: A



6. These question consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses: Assertion: Protonema of Funaria resembles green algae.

Reason: It forms antheridia and archegonia.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion

B. If both Assertion and Reason are true but Reason is not a corret explanation of the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: C



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7. These question consist of two statements each printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses: Assertion: In angiosperms the conduction of water is more efficient because their xylem has vessels.

Reason: Conduction of water by vessel elements is an active process with energy supplied by xylem parenchyma rich in mitochondria.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false .

Answer: C



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8. Assertion: Red algae contribute in producing coral reef. Itbr. Reason: Some red algae secrete and deposit calcium carbonate our their walls.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of

the Assertion.

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: A



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9. Assertion: Chlorella could serve as a potential source of food and energy.

Reason: When dried, chlorella has 15% protein

45% fat, 10% carbohydrate, 20% fibre, and 10% minerlas and vitamins.

A. If both Assertion and Reason are true and the Rason is a correct explantion of the Assertion .

B. If both Assertion and Reason are true but Reason is not a corret explanation of the Assertion .

C. If Assertion is true but Reason in false.

D. If both Assertion and Reason are false.

Answer: C



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Competition File E Analogy Type Questions

1. Angiosperms: Roots: Rhodophyta::



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2. Fern: Prothallus:: Moss:



3. Moss: Capsule:: Fern



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4. Angiosperms : Flowers : : Conifers :



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Competition File F Reasoning Type Questions

1. Sexual reproduction is of oogamous type in bryophytes .



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2. In algae and fungi plant body is thallus.



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3. In red algae and blue green algae bilioproteins are present .



4. Cell wall of red algae protects the brown algae from drying or freezing on their exposure to air .



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5. Male sex organs are called antherida and female sex organs are called archegonia in Bryophytes.



6. Chlamydomonas is motile.



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7. Selaginella bears two types of spores and Dryopteris (fern) bears on one type of spores in pteridophytes .



8. Moss like funaria is amphibious in nature .



9. In ferns like pteris leaf is called frond.



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10. Seeds are enclosed by fruit wall or pericarp.



11. Leaves in ferns are large compound and of megaphyllous type.



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12. In Brassica seeds are formed but it is not placed in gymnosperms.



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13. Life cycle is diplontic in angiosperms .



14. Double fertilization is present is angiosperms .



15. Diploid (sporophytic) phase is more prominent and long lived and haploid (gametophytic) phase is short lived .



16. In double fertilization, one male gamete fuses with the (i) to form zygote and the other male gamete fuses with (ii) to form primary endosperm nucleus.



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Competition File G Additional Multiple Choice Questions

1. Oldest gymnospermous tree is

- A. Zamia pygmia
- B. Pinus longavaea
- C. Sequoia sempervirens
- D. Taxodium mucronatum

Answer: B



- 2. Leaves of Nelumbo plant are
 - A. Epistomatic

- B. Hypostomatic
- C. Amphistomatic
- D. None of these

Answer: A



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

(A) In chlorophyceae the stored food materialis starch and the major pigments arechlorophyll-a and d(B) In phaeopphyceae, laminarin is the stored

food and major pigments are chlorophyll-a

and b

- (C) In rhodophyceae, floridean starch is the stored food and the major pigments are chlorophyll-a, d and phycoeythrin.
 - A. A is correct but B and C are wrong
 - B. A and B are correct but C is wrong
 - C. A and C are correct but B is wrong

D. C is correct but A and B are wrong

Answer:



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4. Choose the wrong pair:

A. Hepaticopsida - Marchantia

B. Lycopsida - Selaginella

C. Bryopsida - Anthoceros

D. Pteropsida - Dryopteris

Answer: C



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5. In which plant, the body represent gametophytic phase and bear haploid gametes?

A. Gelidium

B. Ricacia

C. Lycopodium

D. Equisetum

Answer: B



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- **6.** Spirulina belongs to the kingdom
 - A. Monera
 - B. Fungi
 - C. Plantae
 - D. Animalia

Answer: A

7. In which one of the following male and female gametophytes do not have free living independent existence

A. Polytrichum

B. Cedrus

C. Pteris

D. Funaria

Answer: B

8. Which of the following is heterosporous

A. Adiantum

B. Equisetum

C. Dryopteris

D. Salvinia

Answer: D



9. Coralloid root is the feature of

A. Cycas

B. Mosses

C. Pinus

D. Selaginella

Answer: A



10. Yield of rice is increased by

- A. Azolla
- **B.** Nostoc
- C. Anabaena
- D. Clostridium

Answer: A



11. Club moss' belongs to

- A. Algae
- B. Pteridophyta
- C. Fungi
- D. Bryophyta

Answer: B



12. Cleavage polyembryony occurs in

- A. Pinus
- B. Mini Cycas
- C. Cycas
- D. Ephedra

Answer: A



- 13. More than ove answer may be correct
- 1. Fertile spike-Ophioglossum
- 2. Sporangiophore-Equisetum
- 3. Synangium-Psilotum
- 4. Apophysis-Spirogyra.
 - A. 1,2,3 are correct
 - B. 1 and 2 are correct
 - C. 2 and 4 are correct
 - D. 1 and 2 are correct

Answer: A

- **14.** More than one answer may be correct:
- Marchantia polymorpha
- 1. Is dioecious
- 2. Possesses antheridiophores and archegoniophores
- 3. Lacks foot and seta in its sporophyte
- 4. Is heterosporous.
 - A. 1,2,3 are correct
 - B. 1 and 2 are correct

- C. 2 and 4 are correct
- D. 1 and 3 are correct

Answer: B



- 15. In Funaria, stomata are present on the
 - A. Stem
 - B. Leaves
 - C. Capsule

D. Apophysis

Answer: C



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16. Which of the following is a Prokaryote

- A. Amoeba
- B. spirogyra
- C. Bacteria
- D. Chlamydomonas

Answer: C



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17. Male gamete in angiosperm is produced by:

A. Generative cell

B. Microspore cell

C. Vegetative cell

D. Tube cell

Answer: A

18. Meristematic tissue in vascular bundle is

A. Phellem

B. Procambium

C. Interfascicular cambium

D. Fascicular cambium

Answer: D



19. The plant part which consists of two generations one within the other is

A. Germinating pollen grain

B. Embryo

C. Unfertillized egg

D. Seed

Answer: D



20. External fertilization occurs in majority of

- A. Algae
- B. Fungi
- C. Liverworts
- D. Mosses

Answer: A



- **21.** Which of the following combinations of characters is true for slime moulds?
 - A. Parasitic plasmodium without walls spores dispersed by air currents
 - B. Saprophytic plasmodium without walls spores dispersed by water
 - C. Parasitic plasmodium without walls spores dispered by water

D. Saprophytic plasmodium without walls spores dispersed by air currents

Answer: D



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22. In which of the following pyrenoids are present.

A. Chara , Fucus , Polysiphonia

B. Vovox, Spirogyra, Chlamydomonas

- C. Porphyra, Ectocarpus, Ulothric
- D. Sargassum, Lamminaria, Gracillaria

Answer: B



- 23. Resin and turpentine are obtained from
 - A. Teak
 - B. Oak
 - C. Eucalyptus

D. Pine

Answer: D



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24. Both chlorophyll a and b are present in

- A. Rhodophyceae
- B. Phaeophyceae
- C. Chlorophyceae
- D. None of these

Answer: A



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25. Agar agar is obtained from

A. Gelidium

B. Nostoc

C. Chlamydomonas

D. Ulothrix

Answer: A

26. An alga rich in proteins is

A. Ulothrix

B. spirogyra

C. Nostoc

D. Chlorella

Answer: D



27. Component of cell of fungi is:

- A. Cellulose
- B. Pectin
- C. Chitin
- D. Dextrin

Answer: C



28. Which of the following is an edible 'Fungi'

A. Mucor

B. Penicillium

C. Rhizopus

D. Agaricus

Answer: D



1. Define alternation of generation.



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2. What are elaters?



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3. Which type of venation is present in ferns?



4. Whichn type of sperms are present in Cycas ?



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5. What is protonema?



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6. Most algal genera show haplontic life style.

Name an algae which is (a) Haplo diplontic (b)

Diplontic



7. What is the ecological importance of pteridophytes?



8. What are bogs?



9. Name three groups of plants which bear archegonia.



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10. Mention ploidy of the following:

(i) Zygote (ii) Ovum (iii) Gemma of Marchantia (iv) Prothallus of ferns



11. How is natural system of classification different from artificial system of classification ?



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12. What is heterospory? Write its significance



13. Demonstrate alternation of generations in ferns.



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14. Both gymnosperms and angiosperms bear seeds, then why are they classified separately?



15. Define (A) Cytotaxonomy (b)



Chemotaxonomy



16. Describe various methods of asexual reproduction in algae.

