



# **BIOLOGY**

**BOOKS - KUMAR PRAKASHAN KENDRA**

**BIOLOGY (GUJRATI ENGLISH)**

**PLANT KINGDOM**

**Section A Exam Oriented Questions Answers  
From Darpan**

1. Give name of scientists contributing towards classification and classification of plants.



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2. Give information about modern classification methods.



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3. Write a note on general characteristic and types of algae.



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4. Write a note on chlorophyceae.



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5. Write a note on Phaeophyceae.



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6. Write a note on Rhodophyceae.



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7. Mention divisions of algae and their main characteristics .



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8. Describe common characteristics of Bryophytic plants.



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9. Write a note on Liverworts.



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10. Write a note on Moss.



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**11.** Give detailed information about pteridophytes.



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**12.** Give common characteristics of Gymnosperms.



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**13.** Give explanation about life cycle in Gymnosperms.



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**14.** Write a note on Angiosperms.



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**15.** Give explanation about life cycles in plants.



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## Section B Difference Scientific Reasons

1. Give difference :

Bryophytes and Pteridophytes.

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2. Give difference :

Gymnosperms and Angiosperms .

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**3. Give difference :**

Dicotyledons and Monocotyledons.

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**4. Give difference :**

Brown Algae (Phaeophyceae) and Red Algae  
(Rhodophyceae)

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5. Give scientific reasons :

Cone bearing plants possess pointed thick cuticled leaves.



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6. Give scientific reasons :

Algae are the best important primary producers.



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7. Give scientific reasons :

In pteridophytes development of zygote inside female gametophyte is considered as important phase.



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**Section C Difference Explanation Terms Importance Full Name Contribution Of Scientists**

1. Definitions/Explanation:

Autotrophic Nutrition.



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## 2. Definitions/Explanation:

Parasitic Nutrition



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## 3. Definitions/Explanation:

Prothallus



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#### 4. Definitions/Explanation:

Alternation of Generation



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#### 5. Definitions/Explanation:

Heterosporous



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## 6. Definitions/Explanation:

Oogamous



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## 7. Definitions/Explanation:

Ovule



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## 8. Definitions/Explanation:

Pollination



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## 9. Definitions/Explanation:

Double Fertilisation



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**10. Importance :**

Rhizoids



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**11. Importance :**

Gemmae



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## 12. Importance :

Mycorrhiza



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## 13. Importance :

Coralloid



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**14. Importance :**

Agar. Agar



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**15. Full name**

PEN



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## 16. Contribution of Scientists

George Bentham and Joseph Dalton Hooker

(1817-1911)



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## 17. Contribution of Scientists

Pro. Shivram Kashyap



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## 18. Contribution of Scientists

Botanist Rothmeller.



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## Section D Textual Exercise

1. What is the basis 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 ?



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



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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?



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



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8. Explain briefly the following terms with suitable examples :

(i) protonema

(ii) antheridium

(iii) archegonium

(iv) diplontic

(v) sporophyll

(vi) isogamy



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**9. Differentiate between the following:**

Homosporous and Heterosporous  
pteridophyte



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**10. Differentiate between the following:**

Syngamy and Triple fusion



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11. Match the following (column-I with column-II)

Column-I		Column-II	
(a)	Chlamydomonas	(i)	Moss
(b)	Cycas	(ii)	Pteridophyte
(c)	Selaginella	(iii)	Algae
(d)	Sphagnum	(iv)	Gymnosperm



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## Section E Solution Of Ncert Exemplar Multiple Choice Questions

1. Cyanobacteria are classified under

A. Protista

B. Plantae

C. Monera

D. Algae

**Answer: C**



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

A. Oogamy

B. Isogamy

C. Anisogamy

D. Zoogamy

**Answer: C**



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

A. Rhodophyceae

B. Chlorophyceae

C. Phaeophyceae

D. All of the above

**Answer: C**



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4. A plant shows thallus level of organization.

It shows rhizoids and is haploid. It needs water

to complete 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**



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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: D**



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7. The embryo sac of an angiosperm 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 flowering 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 an

A. Angiosperm

B. Free fern

C. Pteridophyte

D. Gymnosperm

**Answer: A**



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## Section E Solution Of Ncert Exemplar Very Short Answer Type Questions

1. Food is stored as floridean 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 life cycle

(c) Haplo-diplontic life cycle .



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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 alga which is (a) Haplo-diplontic (b)

Diplontic



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



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## Section E Solution Of Ncert Exemplar Short Answer Type Questions

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



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



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3. Heterospory 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 spermatophytes. Do you think heterospory has some evolutionary significance in plant kingdom ?



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4. How far does Selaginella one of the few 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 ?



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



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7. Comment on 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?



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9. In which plant will you look for mycorrhiza Fungi forms a colony in outside cells or inside and coralloid roots ? Also explain what these cells of host plant. It absorbs nutrients from soil. terms mean.



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**Section E Solution Of Ncert Exemplar Long Answer Type Questions**

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



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2. With the help of a schematic diagram describe the haplo-diplontic 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 from each other?

Based on your answer how do you justify this association as symbiosis ?

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 partner will die.

**Answer: B**



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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.



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## Questions From Module Important Mcq For Neet

1. Which plant is known as being useful to absorb water, useful in place of fungi and as fuel ?

A. Markentia

B. Riccia

C. Sphagnum

D. Funaria

**Answer: C**



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2. What is required for transport of male gametes in Bryophytes and pteridophytes ?

A. Birds

B. Water

C. Wind

D. Insects

**Answer: B**



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**3.** The biggest flower is of Rafflesia plant.

Which kind of plant is it?

A. Total stem parasite

B. Total root parasite

C. Incomplete stem parasite

D. Incomplete root parasite

**Answer: B**



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**4. From what Iodine is obtained ?**

A. Green algae

B. Brown algae

C. Red algae

D. Blue green algae

**Answer: B**



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5. Which of the following is protein rich and water soluble photosynthetic pigment?

A. Xanthophyll

B. Phycocyanin

C. Anthocyanin

D. Chlorophyll (green pigment)

**Answer: B**



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## Objective Section Multiple Choice Questions

1. What is the basis of the earliest systems of classification ?

- A. Used only gross superficial characters
- B. Based mainly on vegetative characters
- C. Systems was artificial
- D. All of these

**Answer: D**



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2. Natural systems of classification was given  
by



A. R. H. Whittaker

B. Bentham and Whittaker

C. Bentham and Hooker

D. Rudolf Virchow

**Answer: C**



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**3. Taxonomy based on cytological information**

is

A. chemotaxonomy

B. cytotaxonomy

C. numerical taxonomy

D. phylogenetic classification

**Answer: B**



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**4. Spirogyra reproduces**

A. asexually

B. sexually by non-flagellated, non-motile

similar sized gametes

C. sexually by flagellated motile dissimilar

gametes

D. both (A) and (B)

**Answer: D**



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**5. Pick the correct pair**

A. Volvox - isogamous

B. Fucus - isogamous

C. Volvox - oogamous

D. Fucus - anisogamous

**Answer: C**



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**6. Which one is mismatched ?**

A. Porphyra - Red algae

B. Polysiphonia - Brown algae

C. Fucus – Brown algae

D. Dictyota - Brown algae

**Answer: B**



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7. Major pigments in the members of phaeophyceae

A. Chlorophyll-a and b only

B. Chlorophyll-a, c and fucoxanthin

C. Chlorophyll-a, d and phycoerythrin

D. None of these

**Answer: B**



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**8. Which algae class has polysulphate esters in its cell wall ?**

A. Cyanobacteria

B. Rhodophyceae

C. Phaeophyceae

D. None of these

**Answer: B**



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9. Which one is not a member of Rhodophyceae ?

A. Fucus

B. Porphyra

C. Gracilaria

D. Gelidium

**Answer: A**



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**10.** First organism to colonise rocks are

A. Lichens

B. Mosses



C. Both (A) and (B)

D. Fungi

**Answer: C**



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**11. What is true for gemmae ?**

A. Green, unicellular, sexual buds

B. Green, unicellular, asexual buds

C. Yellow, multicellular, sexual buds

D. Green, multicellular, asexual buds

**Answer: D**



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**12.** Evolutionarily which group of plants are first terrestrial plants to have xylem and phloem

A. Liverworts

B. Mosses

C. Angiosperms

D. Pteridophytes

**Answer: D**



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**13.** Which group of plants does not has free living existence of male and female gametophyte ?

A. Gymnosperms

B. Bryophytes

C. Pteridophytes

D. Both (B) and (C)

**Answer: A**



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**14.** Coralloid roots are present in

A. Pinus

B. Cycas

C. Ginkgo

D. Thuja

**Answer: B**



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**15.** Which of the following degenerate after fertilization ?

A. Synergid

B. Antipodals

C. PEN

D. Both (A) and (B)

**Answer: D**



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**16. Kelps are**

A. haplontic

B. diplontic

C. Haplo-diplontic

D. diplo-haplontic

**Answer: C**



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**17. Diplontic life cycle is observed**

A. All seed-bearing plants

B. Bryophytes

C. Algae

D. Fungi

**Answer: A**



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**18. Class of Adiantum is**

A. lycopsida

B. pteropsida

C. sepenopsida

D. psilopsida

**Answer: B**





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## Objective Section Assertion Reasoning Type Questions

1. A: Mosses are evolved from algae

R : Protonema of masses is similar to some green algae

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: B**



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2. A: The bryophytes exist in two phases gametophyte and sporophyte.

R : The sporophyte is nutritionally independent.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: A**



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3. A : Water is not required for fertilization process in ferns.

R: Malic acid of archegonial neck attract antherozoids.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: C**



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**4. A:** Classification proposed by Bentham and Hooker is nature.

**R :** This system of classification used as many taxonomic characters as possible.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: B**



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5. A: Gymnosperms do not produce fruits.

R : The ovules of gymnosperms are not enclosed within the ovaries.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: A**



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**6. A:** Rhizoids of liverworts are unicellular.

**R :** Liverworts can not develop multicellular rhizoids.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.



C. A is correct and R is false.

D. A and R are false.

**Answer: C**



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7. A: Most of the red algae are marine.

R : Red algae contain pigment anthocyanin.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: C**



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**8. A:** Some thalloid forms of bryophytes are called liverworts.

R: The thalli of liverworts look like liver of animals.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: A**



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9. A: Moss protonema resembles green algae.

R: It develops unicellular sex organs.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: C**



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**10. A:** Many visitor experiences skin and respiratory allergies when they visit hilly areas.

**R :** Pollens produced by gymnosperms are present in air.

A. A and R both are correct and R is correct explanation of A.

B. A and R are correct but R is not explanation of A.

C. A is correct and R is false.

D. A and R are false.

**Answer: A**



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**Objective Section Analogy Type Questions**

1. Algin : brown algae :: carrageen : .....



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2. Ectocarpus : filamentous form :: kelp : .....



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3. Spirogyra : isogamy :: volvox : .....



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4. Rhodophyceae : floridean starch ::  
phaeophyceae : .....

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5. Marchantia : liverworts :: funaria : .....

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6. Pinus roots : mycorrhiza :: cycas roots : .....

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7. Fucus : diplontic :: ectocarpus .....



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## Objective Section Pick Up The Correct Option

1. Polysiphonia shows haplontic/haplo-diplontic life cycle.



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2. Angiospermic embryosac has 2-celled/3-celled egg apparatus.



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3. Equisetum belongs to sphenopsida/pteropsida.



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4. Bryophyte has little/significant economical importance.



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5. Amphibians of plant kingdoms are bryophytes/ gymnosperms.



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6. Gemmae are sexual / asexual buds



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7. Pyrenoids contain protein/lipid.



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8. Gelidium can be used in preparation of ice creams/medicines.



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1. Thick cuticle and sunken stomata help to reduce water loss in gymnosperms.



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2. Selaginella is a homosporous plant.



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3. Reduced male gametophyte of gymnosperm is called pollengrain.



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4. Leafy stage develops from secondary protonema as a apical bud.



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5. Leaves of selaginella are large.



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6. The sporophyte of bryophyte is free-living.



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7. The main plant body of bryophyte is diploid.



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8. Zygote of bryophytes undergo reduction division immediately.



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9. Sporophyte of mosses contain foot, seta and capsule.



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10. All bryophytes exhibits haplo-diplontic life cycle.



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## Objective Section Fill In The Blanks

1. Asexual reproduction is by ..... produced in zoosporangia in chlorophyceae.



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2. The plant body in liverwort is .....



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3. The megaspore mother cell in pinus divides..... to form four megaspores.



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4. The plant body of bryophytes is ..... It produces ..... hence called as ..... The male

sex organ is called ..... They produces .....  
antherozoids.



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5. Pteridophyte are used for ..... purpose and  
as .....



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6. The sporophyte in mosses is ..... than in  
liverwort.



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7. In cycas the ..... leaves persist for few years.



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8. The embryonic formation in angiosperm is preceded by .....



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9. Species of sphagnum, a moss, provide .....  
which is used as ..... as ..... material for  
trans shipment of living material because of  
their capacity to hold



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