

CHAPTER-3: PLANT KINGDOM

ONE MARK QUESTIONS

1) Which is the parasitic green algae that cause rust disease in tea and coffee plants?

Ans: Cephaleuros virescens

2) To which class of bryophyte does polytrichum belong?

Ans: Bryopsida(Musci)

3) Which algae is called sea palm?

Ans: Postelsia palmaeformis

4) Which is the anti coagulant obtained from brown algae?

Ans: Sodium laminarin sulphate obtained from Laminaria is an effective blood anti coagulant.

5) Define phycology.

Ans: The branch of biology dealing with the study of algae is called Phycology.

6) Who prospered the five kingdom system of classification?

Ans: Robert .H.Whittaker

7) Name the photosynthetic product in brown algae.

Ans: Mannitol

8) Name the amphibians of the plant kingdom.

Ans: Bryophytes

9) What is Thallus?

Ans: Dorsiventrally flattened plant body without root stem and leaf differentiation is called Thallus.

10) Which phase is predominant in the life cycle of bryophyte?

Ans: Gametophyte.

11) What are Cryptogams?

Ans: Plants in which reproductive structures are embedded in the plant body and do not bear flowers or seeds.

12) Which phase predominant in the life cycle of Pteridophytes?

Ans: Diploid Sporophyte.

13) Which group of plants have seeds, but no fruits?

Ans: Gymnosperms.

14) What does Embryophyta Siphonogama refer to?

Ans: Embryo producing plants where pollen tube carries male gametes.

15) Name a gymnosperm with vessels in the Xylem.

Ans: Gnetum.

16) Name a parasitic angiosperm.

Ans: Cuscuta.

17) Name the class to which Riccia belongs.

Ans: Hepaticopsida.

18) Name the organ that fixes the plant body of Riccia to the soil.

Ans: Rhizoid.

19) What is Archegonium?

Ans: Female sex organ of Bryophytes, Pteridophytes and Gymnosperms is called Archegonium.

20) Why the sporophyte of gymnosperm is heterosporous?

Ans: Sporophyte produces two types of spores like smaller micro spores and larger mega spores so it is heterosporous.

21) Why bryophytes are called non vascular Cryptogams?

Ans: Bryophytes do not contain Xylem and phloem tissues so they are non vascular and do not produce visible flowers. So they are Cryptogams.

22) Give one example of Lycopsidea.

Ans: Lycopodium.

23) What is a gametophyte?

Ans: It is a plant body which produces male and female gametes.

24) What is a sporophyte?

Ans: It is a plant body which produces spores.

25) What are epiphytes?

Ans: Plants that grow upon other plants are called Epiphytes.

TWO MARK QUESTIONS

1. Distinguish between Green algae and brown algae.

GREEN ALGAE	BROWN ALGAE
<ol style="list-style-type: none">1. Mostly fresh water.2. Chlorophyll a and chlorophyll b present.3. Fucoxanthin is absent.4. Reserve food material is starch.	<ol style="list-style-type: none">1. Mostly marine.2. Chlorophyll a and chlorophyll c present.3. Fucoxanthin is present.4. Reserve food material is laminarin.

2. Distinguish between Brown algae and red algae.

BROWN ALGAE	RED ALGAE
<ol style="list-style-type: none">1. Chlorophyll a and chlorophyll c is present.2. Fucoxanthin is present3. Phycobilins are absent4. Reserve food material is mannitol and laminarin.	<ol style="list-style-type: none">1. Chlorophyll a and chlorophyll d is present.2. Fucoxanthin is absent.3. Phycobilins are present.4. Reserve food material is floridean starch.

3. Distinguish between homosporous and heterosporous condition in pteridophytes.

Ans: Majority of pteridophytes are homosporous. All spores produced of similar type.

Example: Psilotum

Heterosporous pteridophytes produce macro and microspores. Example: Selaginella.

4. How would you distinguish Monocots from Dicots?

MONOCOTS	DICOTS
<ol style="list-style-type: none">1. Fibrous root system.2. Seeds with a single cotyledon.3. Parallel Venation4. Vascular bundles are scattered irregularly.5. Cambium absent.	<ol style="list-style-type: none">1. Tap root system.2. Seeds with two cotyledons3. Reticulate Venation.4. Vascular bundles are arranged in a ring.5. Cambium present

5. Match the following.

COLUMN I	COLUMN II
a. Chlamydomonas b. Cycas c. Selaginella d. Sphagnum	i. Moss ii. Pteridophyte iii. Algae iv. Gymnosperm

Ans: a) iii b) iv c) ii d) i

6. Name the class to which of the the following belong

- a. Funaria – Bryopsida
- b. Anthoceros – Anthocerotopsida.
- c. Riccia – Hepaticopsida.
- d. Polytrichum- Musci.

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

Ans: Bryophytes live on land but they produce motile sperms which require water for swimming during fertilization.

FOUR/FIVE MARK QUESTION

1. List out the general characters of Chlorophyceae.

Ans: Green algae occur in diverse habitats. They may be terrestrial, Epiphytic, Epizoic, Endozoic and parasitic.

They may be unicellular motile, non motile colonial, filamentous, branched or unbranched forms.

Each cell is Eukaryotic, cell wall is made up of pectin and cellulose.

Chloroplasts occur in various shapes associated with pyrenoids. The reserve food is starch.

Vegetative reproduction takes place by fragmentation . Asexual reproduction by spores. Sexual reproduction takes place by isogamy, anisogamy or oogamy.

2. List the salient features of Phaeophyceae.

Ans: Most of the brown algae are lithophytes, found attached to rocks, some are epiphytes or endophytes. They are macroscopic, much branched, tough hard, leathery in nature.

Chloroplasts have photosynthetic pigments chlorophyll a carotenoids and brown pigment fucoxanthin.

Reserve food is stored in the form of laminarin and mannitol.

Reproduction occurs by vegetative, asexual and sexual methods.

3. List the salient features of Rhodophyceae.

Ans: Majority of them are marine, growing in deep seas attached to rocks.

The cellwall is made up of pectin and cellulose with a coating of phycocolloids.

Plastids contain many pigments. The red colour is due to the presence of excess amount of Phycoerythrin.

The reserve food material is floridan starch. They reproduce by vegetative, asexual and sexual methods.

4. Write the general characteristics of bryophytes

Ans: They are non vascular plants showing amphibious habitat

Gametophytes bears male and female sex organs. It is the dominant phase of life cycle

Antheridia produces biciliate antherozoids. Archegonia produces egg, the female gamete.

Fertilization takes place in presence of water leading to formation of a zygote.

Embryo develops into a diploid sporophyte which is dependent on gametophyte.

Sporophyte reproduces by formation of haploid spores. The spore germinates and produces gametophyte.

5. List the general characters of pteridophytes.

Ans: The life cycle consists of diploid phase represented by sporophyte and haploid phase by gametophyte.

Sporophyte bears roots, stems and leaves. It reproduces asexually by sporangia.

Sporangia may be arranged in groups called sorus

Vascular tissues xylem and phloem are present in the sporophyte.

The gametophyte is short lived and bears male and female reproductive structures namely antheridia and archegonia.

Water is essential for fertilization

6. List the general characters of gymnosperms.

Ans: They are called naked seeded plants due to presence of exposed seeds without ovary. the microspores are produced in leaf like microsporophylls and megaspores are produced in megasporophylls.

Sporophyte shows the presence of taproot system. Leaves are two types-green photosynthetic and brown coloured leaves, young leaves show circinate vernation/

Xylem and phloem arranged into vascular bundles.

Water is not needed for sexual reproduction as pollengrains are carried away by wind.

7. Describe the economic importance of algae

Ans: algae are useful to man in many ways. They are primary producers which form the basis of food for aquatic animals. Example porphyra, laminaria, sargassum

Algin is used in soap, cream, polish, paint, tooth paste, cosmetics, ointments, etc

Brown algae is rich in iodine content and it is used in goitre medicines.

Agar agar obtained from red algae is used in jellies, culture media, etc.

Antibiotics, ointments are prepared from algae.

8. Describe the salient features of angiosperms.

Ans : Angiosperms are classified into herbs, shrubs, and trees Ex-mustard, tomato

In angiosperms, the seeds are enclosed by fruits. The pollen grains and ovules are developed in specialised structures called flowers. The monocots have single cotyledons.

The stamen produces pollen grains and egg is produced inside the ovule.

The fusion of male and female gamete results in zygote which develops into an embryo.

The ovules develop into seeds and the ovaries develop into fruit .
