

Chapter 6: Classification of plants

Question. 1. Fill in the blanks

- (1) **Thallophyta** plants have soft and fibre-like body.
- (2) **Bryophyta** is called the 'amphibian' of the plant kingdom.
- (3) In pteridophytes, asexual reproduction occurs by **Spores** formation and sexual reproduction occurs by **gametes** formation.
- (4) Male and female flowers of **gymnosperms** are borne on different sporophylls of the same plant.

Question. 2. Find the odd man out

- (1) **Pteridophyta, Thallophyta, Bryophyta, Gymnosperms.**

Ans. Gymnosperms (Others are Cryptogams)

- (2) **Spirogyra, Moss, Ulothrix, Ulva.**

Ans. Moss (Others are Algae)

- (3) **Thuja, Deodar, Cycas, Anthoceros.**

Ans. Anthoceros (Others are Gymnosperms)

- (4) **Riccia, Marsilea, Funaria, Marchantia.**

Ans. Marsilea (Others are Bryophytes)

- (5) **Pteris, Adiantum, Sargassum, Equisetum.**

Ans. Sargassum (Others are Pteridophytes)

- (6) **Bamboo, Banana, Onion, Bean.**

Ans. Bean (Others are Monocots)

Question. 3. Find the correlation between the first given pair and rewrite the answer:

- (1) Kingdom Plantae: Autotrophic:: Kingdom Fungi: **Heterotrophic**
- (2) Protista: Eukaryotic:: Monera: **Prokaryotic**
- (3) Asexual reproduction in ferns: Spore formation:: Sexual reproduction in ferns: **Gamete formation**
- (4) Spore formation: Cryptogams:: Seed formation: **Phanerogams**
- (5) Dicotyledonous plants: Pentamorous flower:: Monocotyledonous plants: **Trimerous flower**

Question. 4. Difference between Dicotyledonous and monocotyledonous plants

	Dicotyledonous plants	Monocotyledonous
Seed	Two cotyledons	Single cotyledon
Root	Well developed, primary root (Tap root)	Fibrous roots
Stem	Strong, hard. Ex. Banyan tree	Hollow, Ex. Bamboo False, Ex. Banana Disc-like, Ex. Onion.
Leaf	Reticulate venation	Parallel venation
Flower	Flowers with 4 or 5 parts or in their multiples (tetramerous or pentamerous)	Flowers with 3 parts or in multiples of three (trimerous).

Question. 5. Answer the following question in breif

(1) Write a short note on Cryptogams.

Answer:

1. Cryptogams are non-seed-producing plants that reproduce through spores.
2. They include three groups: Thallophyta, Bryophyta, and Pteridophyta.
3. These plants do not produce flowers or seeds, and their reproductive organs are often hidden.
4. Cryptogams thrive in moist environments and are essential for soil formation and maintaining ecological balance.

(2) Write a short note on Thallophyta.

Answer:

1. Thallophyta are the simplest plants, which include algae.
2. They have a plant body known as a thallus, which lacks true roots, stems, and leaves.
3. Thallophytes are mostly aquatic and autotrophic, performing photosynthesis.
4. Examples include Spirogyra, Chlamydomonas, and Ulva.

(3) Write a short note on Bryophyta.

Answer:

1. Bryophytes are non-vascular plants like mosses and liverworts.

2. They have a simple structure without true roots, stems, or leaves, and absorb water directly through their surface.
3. Bryophytes require water for reproduction, as their sperm cells are motile and swim to reach the egg.
4. Examples include *Funaria* (moss) and *Marchantia* (liverwort).

(4) Write a short note on Pteridophyta.

Answer:

1. Pteridophytes are the first vascular plants that contain true xylem and phloem.
2. They reproduce via spores and have true roots, stems, and leaves.
3. Pteridophytes are often found in moist, shaded environments, and examples include ferns, horsetails, and club mosses.
4. The dominant stage in their life cycle is the sporophyte, which is the leafy plant body.

(5) Write a short note on Phanerogams.

Answer:

1. Phanerogams are seed-producing plants, also known as spermatophytes.
2. They have well-developed reproductive structures like flowers or cones.
3. Phanerogams are divided into two groups: Gymnosperms (naked seeds) and Angiosperms (seeds enclosed in fruits).
4. They have vascular tissues (xylem and phloem) for transporting water and nutrients.

(6) Write a short note on Gymnosperms.

Answer:

1. Gymnosperms are seed-producing plants where seeds are exposed or "naked," not enclosed in a fruit.
2. They are usually woody trees or shrubs and reproduce through cones (strobili).
3. Gymnosperms are adapted to cold and dry environments, and examples include pine, cycad, and ginkgo.
4. They have needle-like or scale-like leaves to minimize water loss.

(7) Write a short note on Angiosperms.

Answer:

1. Angiosperms, or flowering plants, are the largest and most diverse group of plants.
2. They produce seeds enclosed in fruits and have well-developed vascular tissues.
3. Angiosperms are classified into monocots (one seed leaf) and dicots (two seed leaves).
4. Examples include roses, grasses, mangoes, and oak trees.

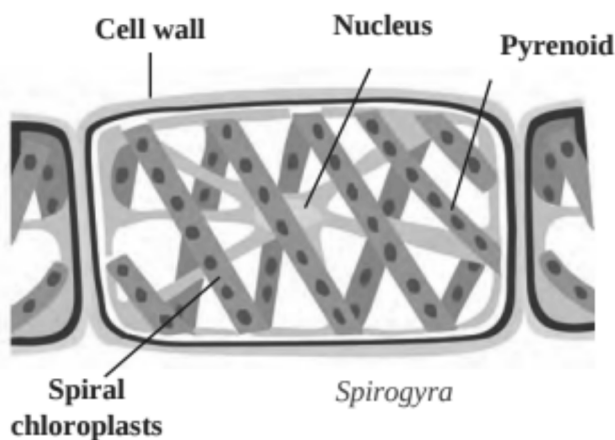
(8) Write a short note on Basis of classification.

Answer:

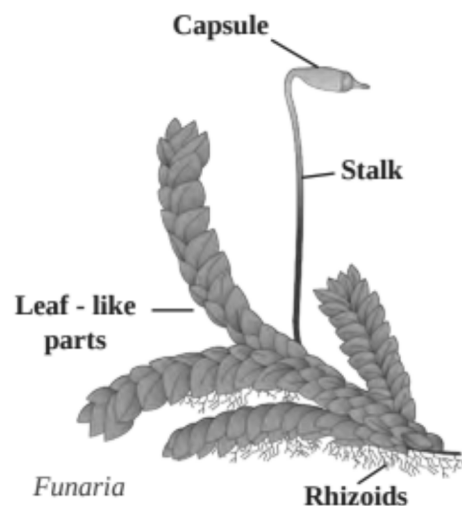
1. The basis of plant classification includes the presence or absence of vascular tissues, reproduction (spores vs seeds), and the development of specialized organs like roots, stems, and leaves.
2. Plants are broadly classified into Cryptogams (spore-producing) and Phanerogams (seed-producing).
3. Phanerogams are further divided into Gymnosperms and Angiosperms based on whether seeds are naked or enclosed in fruits.
4. Classification helps in understanding the evolutionary relationships between different plant groups.

Question. 6. Draw neat and well labelled diagram of

(1) Spirogyra



(2) Funaria



(3) Marchantia



Marchantia

(4) Anthoceros



Anthoceros