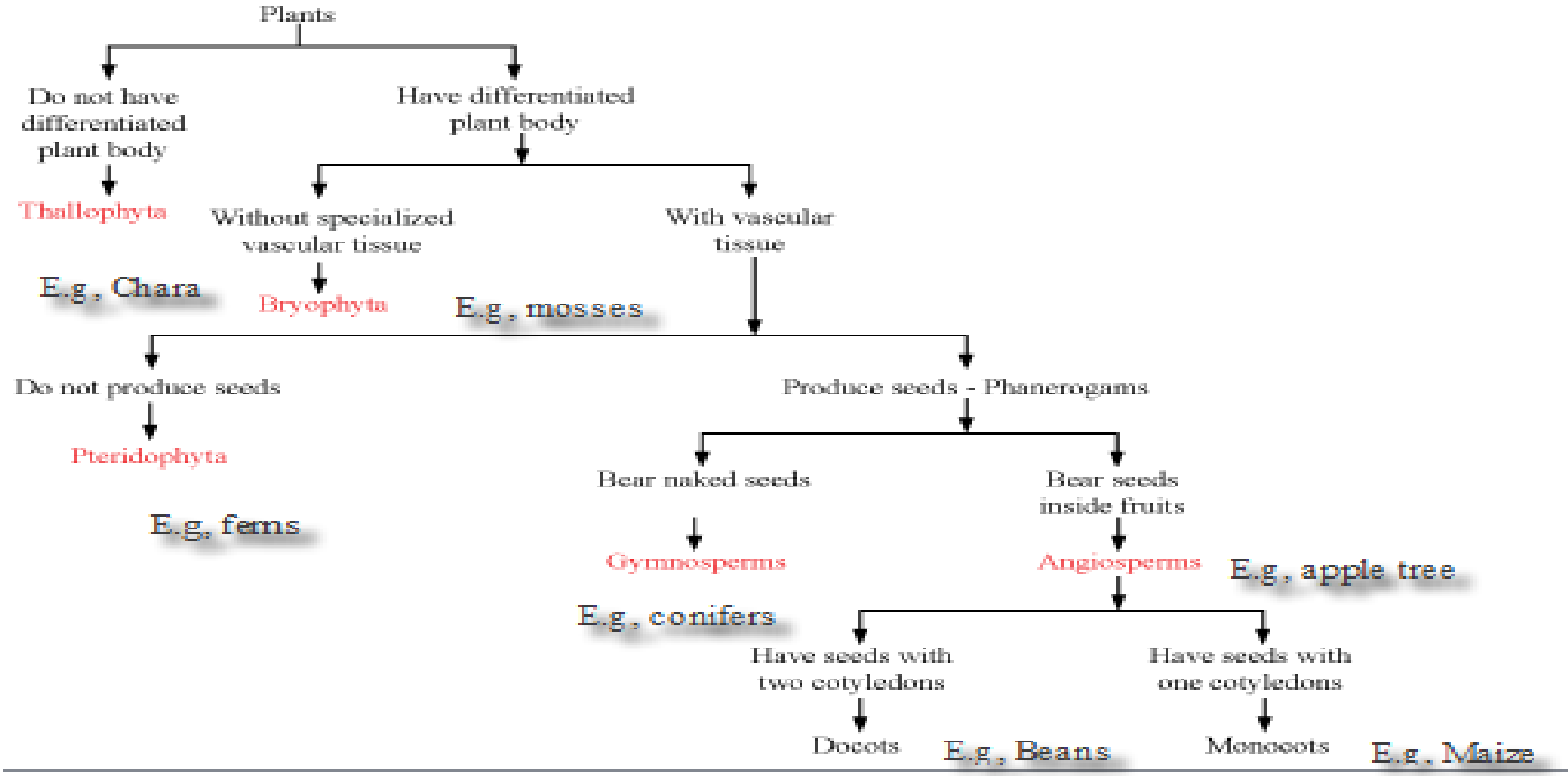
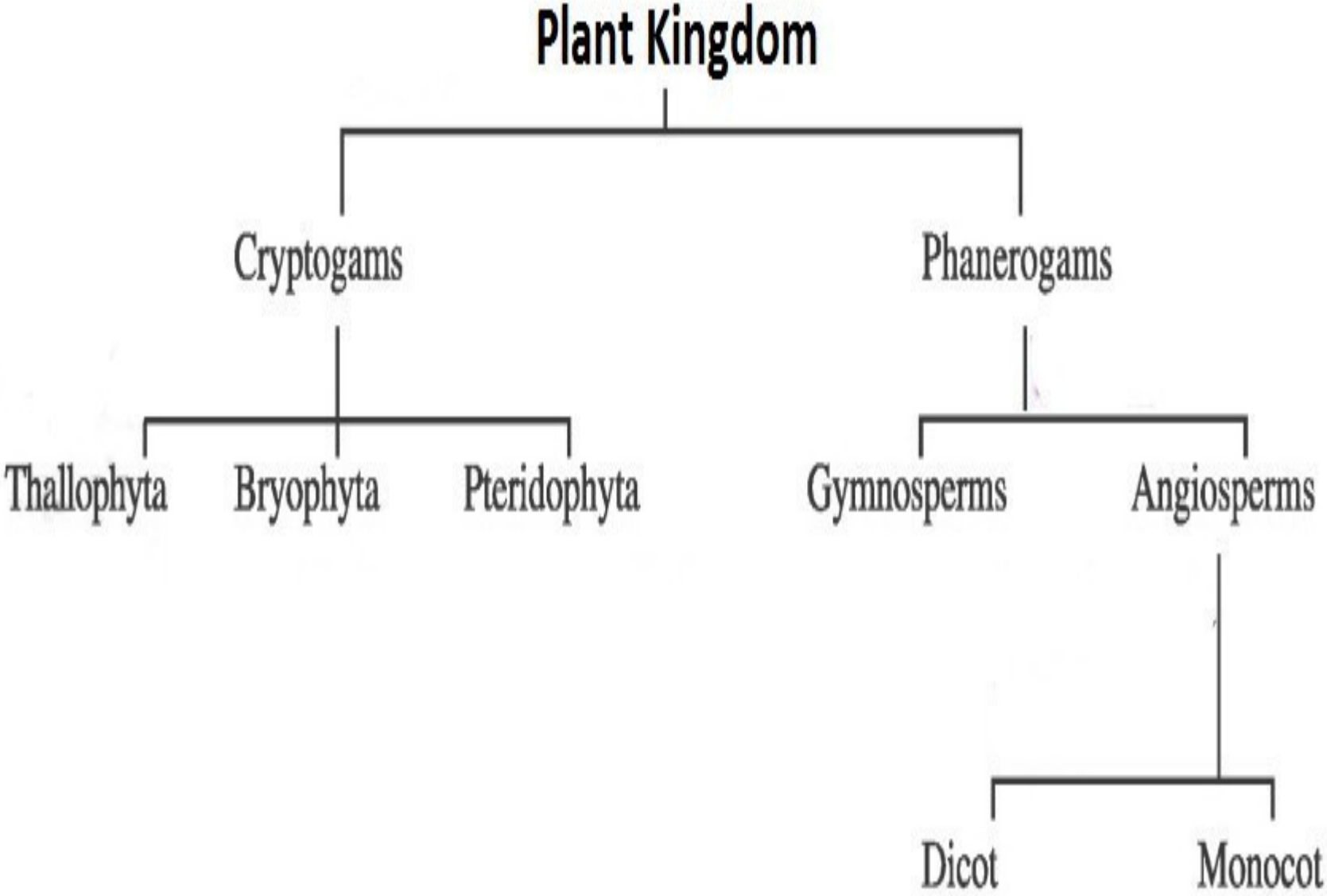
Outline classification of plants




Plant Kingdom
Cryptogams
Phanerogams
Thallophyta
Bryophyta
Pteridophyta
Gymnosperms
Angiosperms
Dicot
Monocot

Plants

Plants are multicellular organisms in the kingdom.

Plants use photosynthesis to make their own food.

There are over 300,000 species of plants.

Plants have an important role in the world's ecosystems. They produce most of the world's oxygen and are important in the food chain, as many organisms.

The study of plants is called botany.

Characteristics of plants:-

Plants are autotrophic & produces their own food.

They are photosynthetic.

Photosynthesis occurs in cell organelles called chloroplasts.

Plants are primary producers in many ecosystems, giving them a vital role in the survival of many other organisms.

In addition, oxygen is a byproduct of photosynthesis, and many organisms depend on oxygen to survive.

Plants are multicellular organisms with eukaryotic cells.
Eukaryotic cell is a relatively large cell with a true nucleus and other organelles .
Plant cells are distinguished by their cell walls containing cellulose, chloroplasts that perform photosynthesis, and a large central vacuole. Prokaryotic cells, on the other hand, are small with no true nucleus or organelles except ribosomes, which produce proteins.
Bacteria have prokaryotic cells.

Many plants have vascular tissue like xylem and phloem. It carries water and nutrients in upwards direction.
Vascular tissue is found in more “complex” plants.
Plants reproduce both sexually and asexually.
It is known as alternation of generations.
A haploid stage alternates with a diploid stage.
Haploid is when cells contain one set of chromosomes, while diploid is when cells contain two sets.

In plants, two haploid gametes join to form a diploid zygote. This diploid zygote divides through mitosis to become a multicellular organism. It is called the sporophyte, and at maturity, it asexually produces haploid spores. The haploid spores then germinate into multicellular organisms called gametophytes. Gametophytes produce haploid gametes, which fuse to make a diploid organism, and the alternation between diploid and haploid starts all over again.

Thallophytes :-

These are a polyphyletic group of non-motile organisms known as thalloid plants.
These are simple or lower plants.
It include fungi, lichens and algae and occasionally bryophytes, bacteria and slime moulds.
Thallophytes have a hidden reproductive system. Thallophytes are defined as plants with undifferentiated bodies.
Various groups of thallophytes are major contributors to marine ecosystems.

Bryophytes:-

It consist three classes known as liverworts, hornworts and mosses.

They are limited in size and prefer moist habitats.

Bryophytes consist of about 20,000 plant species.

Bryophytes produce enclosed reproductive structures.

They do not produce flowers or seeds.

They reproduce via spores.

Bryophytes are usually considered to be a paraphyletic group and not a monophyletic group, although some studies have produced contrary results.

The term "bryophyte" comes from Greek word bryon "tree-moss, oyster-green" and phyton "plant".

Pteridophytes

Pteridophytes are considered as the first plants to be evolved on land.

They are cryptogams, seedless and vascular plants.

They are Spores developing plants produces sporangia.

Sporangia are produced in groups on sporophylls.

Sex organs are multicellular known as antheridia & archegonia as male and female organs respectively.

They show alternation of generations.

Gymnosperms:-

They do not produce flowers.
Seeds are not formed inside a fruit.
They are found in colder regions where snowfall occurs.
They develop needle-like leaves.
They are perennial or woody, forming trees or bushes.
Female reproductive organ not differentiated into ovary, style and stigma.

Angiosperms:-

Angiosperms have flowers at some stage in their life.
Angiosperms have small pollen grains that spread genetic information from flower to flower.
All angiosperms have stamens as male reproductive organ.
Angiosperms have much smaller female reproductive parts than non-flowering plants, allowing them to produce seeds more quickly.