

11/12/26

Ch-4 The Flower

Notes:-

A flower is a specialised reproductive shoot in which leaves are modified into floral structures.

All floral parts are borne on a cup-shaped receptacle or thalamus.

The flower contains four floral structures, also called floral whorls. They are sepals, petals, stamens and pistil.

Structure of A Bisexual flower

1. Sepals:-
 - Sepals are collectively called calyx.
 - Sepals may be free (polysepalous) or fused (gamosepalous).
 - Sepals are usually green.
 - In some cases, sepals are brightly coloured.
 - Example of coloured sepals: Gulmohar.
 - Function: Sepals protect the flower in the bud stage and when green also perform photosynthesis.

2. Petals:-

- Petals are collectively called corolla.
- Petals may be free (polypetalous) or united (gamopetalous).

• Petals are
• Functions

3. Stamens

• Each stamen

• (i) Filament

• (ii) Anther

• Each anther

• Pollen sacs

• Function

4. Pistil:-

• The pistil

• consists

• of ovary

• and style

• Each ovary

• (iii) Style

• stigma

• style

• connective

• ovary

• large

• flower

Complete

• A complete

• Example

• An in

• whorled

• stamens

- Petals are usually brightly coloured.
- Function: Petals attract insects for pollination.

3. Stamens :-

- Stamens are collectively called androecium.
- Each stamen consists of
 - (i) Filament, a long slender stalk
 - (ii) Anther, which is usually two lobed.
- Each anther lobe has two pollen sacs.
- Pollen sacs contain pollen grains.
- Function: Androecium produces pollen grains.

4. Pistil :-

- The single female unit of pistil is called carpel.
- Several carpels fused together are collectively called gynoecium.
- Each carpel consists of 3 parts: (i) stigma, (ii) style, (iii) ovary.
- Stigma is the topmost part.
- Style is a long tube-like slender stalk connecting stigma and ovary.
- Ovary is the reproductive part that holds a large number of ovules.
- Function: Gynoecium produces ovules.

Complete and Incomplete flowers :-

- A complete flower has all four floral whorls.
- Example: Hibiscus.
- An incomplete flower lacks one or more floral whorls. Flowers having only male part are called staminate flowers. Flowers having only female

parts are called pistillate flowers. Such flowers are called unisexual flowers.
Example: Papaya.

Types of flowers based on Sexuality:-

- **Bisexual flower:** A flower containing both male and female reproductive structures. Bisexual flowers are also called hermaphrodites or perfect flowers.
- **Unisexual flower:** A flower having only one reproductive structure, either male or female.
- **Neuter flower:** A flower in which both male and female reproductive organs are absent.
Example: Ray ~~flowers~~ florets of ~~sunflower~~ sunflower.

Sexuality in Plants:-

- In most plants, flowers are bisexual.
- In some plants, male and female flowers are separate.
- Such plants are called unisexual flowering plants.
- They are of 2 types:
 - i) **Monococious plant:** Male and female flowers grow on the same plant. Examples: Pumpkin, Maize.
 - ii) **Dioecious plant:** Male and female flowers grow on separate plants. Example: Papaya, palm.

Inflorescence

Inflorescence:-

- Inflorescence is the manner of arrangement of flowers on the plant.
- ~~Flowers~~ Flowers may be arranged:
 - (i) Singly at the apex of the main stem.
 - (ii) At the terminal apex of lateral branches.
 - (iii) In the axil of leaves.

Placentation: It is the mode of arrangement of ovules within the ovary.

Biological Terms:-

- **Sessile:** Flowers lack stalk.
- **Pollen grains:** The pollen grains are finely powdered particles of different shapes which contains male sperm.
- **Placenta:** Tissue that attaches the ovules to the walls of the ovary.
- **Perianth:** The undifferentiated petals and sepals are together called perianth.
- **Petaloid:** The non-green perianth.
- **Bracts:** ~~When~~ When a flower that arises in the axil of a leaf-like structure, this structure is known as bract.
- **Epicalyx:** The second series of sepals is called episepal, collectively called epicalyx.
- **Actinomorphic flower:** A flower that can be divided into 2 equal halves ~~and~~ through any median plane.
- **Zygomorphic flower:** A flower that can be divided into 2 equal halves only by one vertical plane.