Flower

1. **What are the main parts of a Flower?**
   Ans. The main parts of the flowers are Calyx, Corolla, Androecium and Gynoecium.

2. **Draw the main parts of a Flower.**
   Ans.

3. **Define Calyx.**
   Ans. Calyx is the outermost part of a flower. It is formed by green coloured leaves are called Sepals. These protect the young flower against mechanical injuries and desiccation in their bud stage,
   In some plants sepals become coloured like petals and are called petaloid.

4. **What is Corolla?**
   Ans. It is the second whorl of the flower. It consists of petals which are brightly coloured have various patterns and characteristic odour.

5. **What are the functions of Corolla?**
   Ans. Corolla has duel function
   a. It protects the reproductive organs of a flower.
   b. It attracts pollinators, such as butterflies, bees, other insects and birds.

6. **Define Androecium.**

Ans. Androecium is the third whorl of n flower. It is the male reproductive organ and contains male reproductive parts called stamens.

Each stamen is made up of two prime parts:

a. A long, elongated and thread-like structure called filament.
b. A swollen bilobed structure called anther present on the filament

Another produces powdery structures called pollen grains. Pollen grains contain the male gametes.

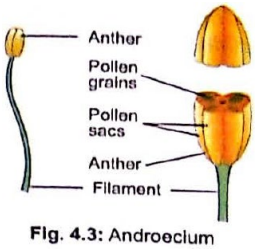


Fig. 4.3: Androecium

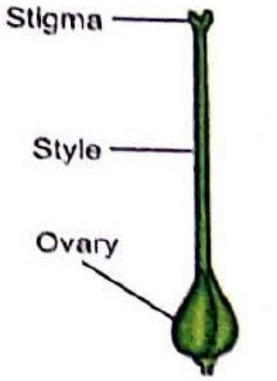
7. **What is Gynoecium.**

Ans. It forms the innermost and fourth whorl of flower. It is called pistil and occupies the central position on the thalamus. It comprises carpel which is the female reproductive organ of a flower.

The carpel is made up of three parts:

a. A swollen base known ns ovary.
b. A slender structure extending from the ovary which is called style.
c. A small round structure.' called stigma at the tip of the style.

Ovary contains one or more egg-shaped ovules, each of which contains a female gamete called egg.



. 4.4: Gynoecium

8. **What is Perianth?**

Ans. The first two whorls of the flower Calyx and Corolla are collectively called Perianth.

9. **What are the reproductive parts of a flower?**

Ans. The androecium and Gynoecium are the main reproductive part of a flower.

10. **What is the main function of flowers?**

Ans. The flowers have a very significant role in the plant kingdom.

a. Flower, being the organ of reproduction, grows into fruit and seeds, which further develops into new plants.
b. Different flowers have different color and odor. These characteristic features of flowers are useful for attracting insects for pollination.

11. **Write the difference between Complete and Incomplete Flower.**

Complete flower	Incomplete flower
Flower with four principal parts like sepal, petal, pistil or stamen is known as a complete flower.	Flower which does not has all the four principal parts are known as an incomplete flower.
For example, Rose	For example, Begonia

12. **What is Asexual Reproduction?**
    Ans. Some plants can reproduce from their vegetative parts, such as leaves, stems, roots etc. This type of reproduction is called Asexual Reproduction.

13. **How many ways fruits and seeds of a plant formed?**
    Ans. Formation of fruits and seeds in plants takes places in two steps:
    a. Pollination: When male and female reproductive cells come together.
    b. Fertilization: When both the reproductive cells fuse together.
14. **What is called Pollination?**
    Ans. The process of transfer of pollen grain from the anther to the stigma is called Pollination.

15. **Where the pollination takes place?**
    Ans. Pollination in plants can take place-
    a. Within the same flower,
    b. Different flowers of the same plant, or
    c. Different flowers of different plants.

16. **What is Self-Pollination?**
    Ans. It is the process during which the pollen grains are transferred from an another to the stigma of the same flower or another flower present on the same plant.
    This process does not require any external pollinating agent.
    Ex: Tomato, Beans etc.

17. **What is Cross Pollination?**
    Ans. The process of transfer of pollen grains from a flower to the stigma of the flower of another plant is called Cross- Pollination.
    The process cannot take place o its own, and needs an external agent to help the transfer.
    Ex: Papaya, China Rose.

18. **What are called Pollinating agents?**
    Ans. The external agents which involves cross-pollination in plants are called Pollinating Agents. They carry pollen and deposit them on the stigma.

19. **What are the features of flowers which are pollinated by insects?**
    Ans. The flowers pollinated by insects possess the following features:
    a. Flowers are large in shape and secrete nectar to attract insects, especially bees.
    b. Petals are usually brightly coloured to attract insects.
    c. Most of these flowers emit a sweet odour as an attractant.
    d. The pollen grains of these flowers are sticky or have spines so that they can attach to the insects.
    e.
20. **What are the features of flowers which are pollinated by Wind?**
    Ans.. The flowers which are pollinated by wind have the following features:
    a. The flowers are small, inconspicuous, and generally do not produce nectar and odour
    b. Pollen grains are light, dry and small so that they can easily fly away.
    c. As during flying lots of grains may not be able to reach the target place, anthers produce large quantities of pollen grains.
    d. Stigmas of the flowers received pollen grains are feathery and hang out so that they can easily receive pollens.
       Ex: Wheat, Corn, Grasses.

21. What are the features of flowers which are pollinated by Water?

Ans. The flowers which are pollinated by water have the following features:

a. Flowers are small in size.
b. Pollen grains are produced in large numbers and they oftain float on the water surface.
c. Submerged flowers have long and slender sticks, so that they reach up to the water surface for pollination.
d. In few plants the male flowers detach from the parent plants and float on the surface of water to reach the female flowers for fertilisation.

Ex: Hydrilla

22. Write the difference between Self Pollination and Cross Pollination

Self-Pollination	Cross-Pollination
Transfer pollen grains from the anther to the stigma of the same flower.	Transfer pollen grains from the anther to the stigma of the different flower.
This process can take place either in the same flower or another flower of the same plant.	This process can take place between two flowers on different plants.
It occurs in the flowers which are genetically same.	It occurs between flowers which are genetically different.
Occurs only in perfect flowers.	Occurs both in perfect or imperfect flowers.
Causes homogenous conditions in progenies.	Causes heterozygous condition in progenies.
Self-pollination increases genetic uniformity and decreases genetic variation.	Cross-pollination decreases genetic uniformity and increases genetic variation.
Causes inbreeding.	Causes outbreeding.
Reduces the gene pool.	Maintains the gene pool.
Produces limited amounts of pollen grains.	Produces large amounts of pollen grains.
In self-pollination, both the stigma and anther mature at the same time.	In cross-pollination, both the stigma and anther mature at the different time.
Transfers few numbers of pollen.	Transfers large numbers of pollen.
This process is carried out even when the flowers are closed.	For cross-pollination to happens flower should be open.
No need of pollinators to transfer pollen grains.	Require pollinators to transfer pollen grains.
Pollen grains are directly transferred onto the stigma of the flower.	Pollen grains are transferred through insects, wind, water, animals, etc.