

Fig. 4.3: Androecium

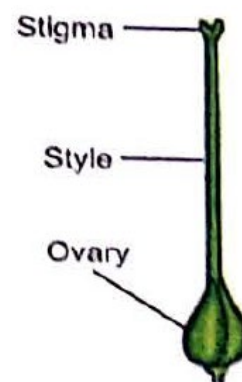
7. What is Gynoecium.

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 swollen base known as ovary.
- A slender structure extending from the ovary which is called style.
- 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 are Non-essential Whorls?

Ans. The sepals and petals are the nonessential or accessory whorls of the flower. Their main function is to protect the inner whorls of the flower and help in the pollination.

11. What are the Essential Whorls?

Ans. The two inner whorls i.e. androecium and Gynoecium are called Essential Whorl of a flower. Because these whorls carry out the reproduction in plant and are essential for the survival and existence of the species.

12. Write the difference between Complete and Incomplete Flower.

Ans.

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

13. Based on male and female reproductive organs flowers are divided how many types?

Ans. Based on presence and absence of male and female reproductive organs Flowers are divided into two types.

- Unisexual Flower
- Bisexual Flower.

14. What are the characteristics of unisexual flowers?

Ans. The characteristics of Unisexual flowers are

- a. These flowers have either male reproductive organ (androecium) or female reproductive organ (gynoecium).
- b. If flowers have only stamens, they are called Staminate flowers. The flowers with only carpels are called Pistillate flowers.
- c. The examples of unisexual flowers are palm, mulberry, cucurbits and papaya.

15. What are called Staminate flower?

Ans. If flowers have only stamens, they are called Staminate flowers.

Ex: Cucumber

16. What are called Pistillate flowers?

If the flowers with only carpels are called Pistillate flowers.

Ex: Begonias, Squash, Corn etc.

17. Why Bisexual Flowers are called Perfect Flower?

Ans. Bisexual flowers have both male and female reproductive organs so that they are called Hermaphrodite and perfect flower.

Ex: Hibiscus, Mustard, Pea, Cotton Etc.

18. What is Pollination?

Ans. Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma.

19. Who are the agents of pollination?

Ans. Pollination agents are insects, birds, water, other animals,

They carry pollens from one flower and deposit them on the stigma of another flower.

20. Depending on the pollination agents pollination are how many types.

Ans. Depending on the pollination agents pollination can be of different types

- a. Entomophily: Pollination by insects.
- b. Anemophily: Pollination by wind
- c. Hydrophily: Pollination by Water
- d. Zoophily: Pollination by animals

21. 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.

22. 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.

23. 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 obtain 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

24. What is Zoophily?

Ans. Many animals such as snails, birds, and squirrels also act as agents of pollination. These flowers are large, produce abundant nectar and pollens, and brightly coloured and scentless.

25. What is Artificial Pollination?

Ans. Artificial pollination occurs when humans intervene with the natural pollination process. They carry pollen, or plant sperm, from one flower to another, allowing the pollen to fertilize the ovaries and create seeds that will develop into fruits and new plants.

26. How fertilisation is happened in plants?

Ans. Fertilisation involves the fusion of male and female gametes.

Fertilization in plant om occur only after pollination when pollens reach the stigma of a flower.

- When the pollen grains reach the stigma, a thin pollen tube grows down from the pollen grain, which penetrates the stigma, passes through the style and reaches the ovule.
- The male gamete moves down through the tube and reaches the ovule.
- The male gamete comes in contact with female gamete and fuses with it inside the ovary.
- It results in the formation of zygote and the process is called fertilisation.
- The ovules containing zygote convert into seeds and the zygote forms an embryo enclosed in a protective seed coat.
- The ovary converts into a fruit containing these seeds.

27. Write the difference between Self Pollination and Cross Pollination

Ans.

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.