

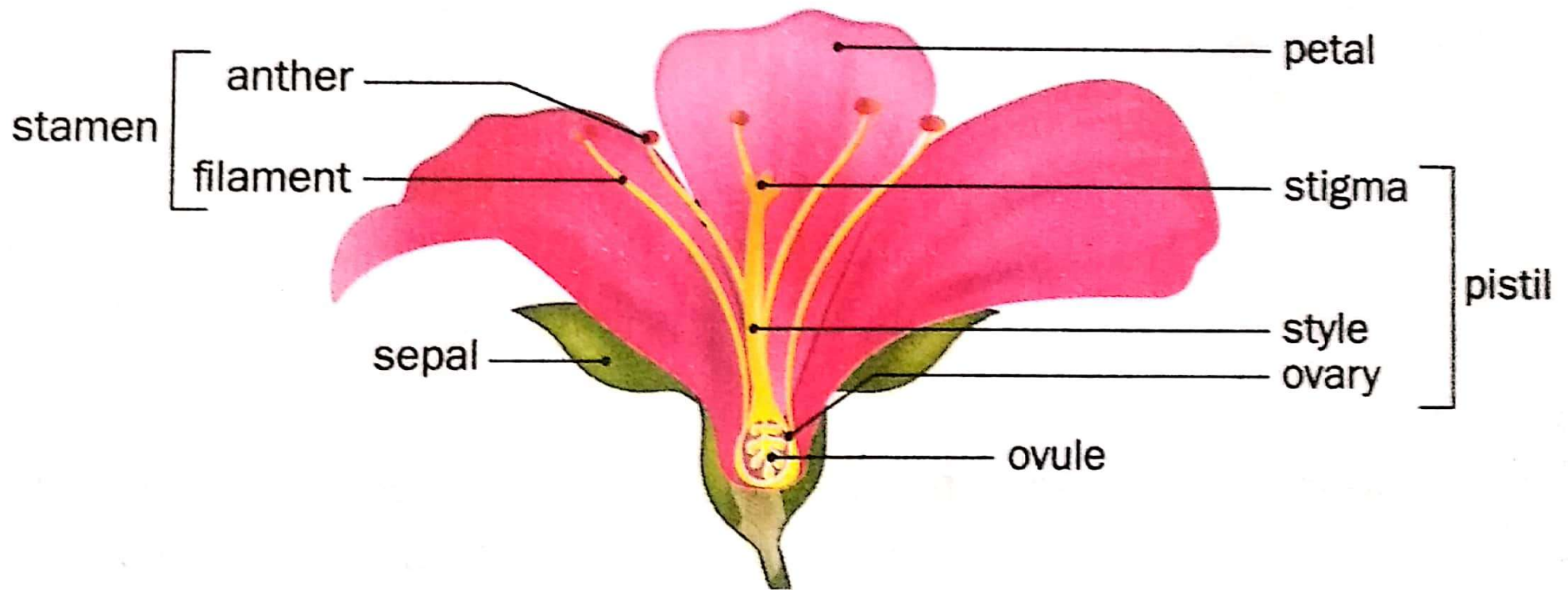
## **BISEXUAL AND MONOSEXUAL FLOWERS**

All flowers may or may not contain both male and female reproductive parts. On the basis of the presence of one or both reproductive parts, flowers may be classified as monosexual (or unisexual) and bisexual.

## Bisexual flowers

These flowers contain both the male and female reproductive parts (stamen and pistil) of the plant. They are also called complete flowers. *Tulip*, rose, and *Hibiscus* are some examples of bisexual flowers.

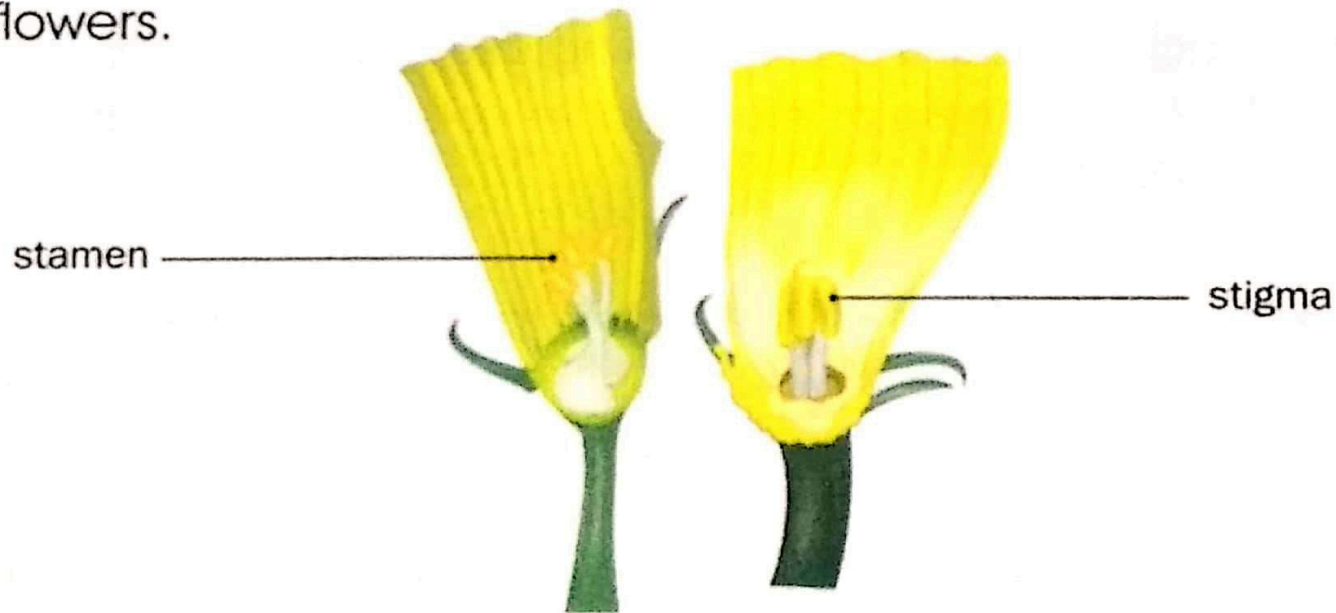
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Longitudinal section of a bisexual flower

## Monosexual flowers

These flowers contain either the male reproductive part (stamen) or the female reproductive part (pistil) of the plant. They are also called incomplete flowers. Flowers of watermelon, pumpkin, cucumber, and papaya are some examples of monosexual flowers.



Longitudinal section of a unisexual flower showing male and female reproductive part

# POLLINATION

*The transfer of pollen grains from the anther to the stigma by various agents is called **pollination**. Pollen grains are transferred within a plant, or from one plant to another, with the help of wind, water, birds, and insects. These are called **agents of pollination**. Pollination leads to the formation of seeds and fruits in a plant, from which new generations of plants can grow.*

## Process of pollination

Pollination is the first step in the process of seed formation. The male reproductive cells (or gametes) are present in the pollen grains that are inside the anther. The female reproductive cells (or gametes) are present in the ovules contained in the ovary. Both the male and female gametes must come in contact with each other for reproduction to take place. When the anthers mature, they split open and the pollen grains are set free. The pollen grains may fall on the stigma of the same flower (in case of bisexual flowers). They may also be carried to the stigma of another flower belonging to the same kind by the different agents of pollination.

## TYPES OF POLLINATION

Pollination is of the following two types.

### Self-pollination

When the pollen grains from the anther of one flower fall on the stigma of the same flower, or of another flower present on the same plant, the process is called **self-pollination**. Self-pollination is commonly seen in pea plants.

### Cross-pollination

When the pollen grains from the anther of one flower are transferred to the stigma of another flower, present on a different plant of the same kind, the process is called **cross-pollination**. Cross-pollination occurs in most flowering plants.

