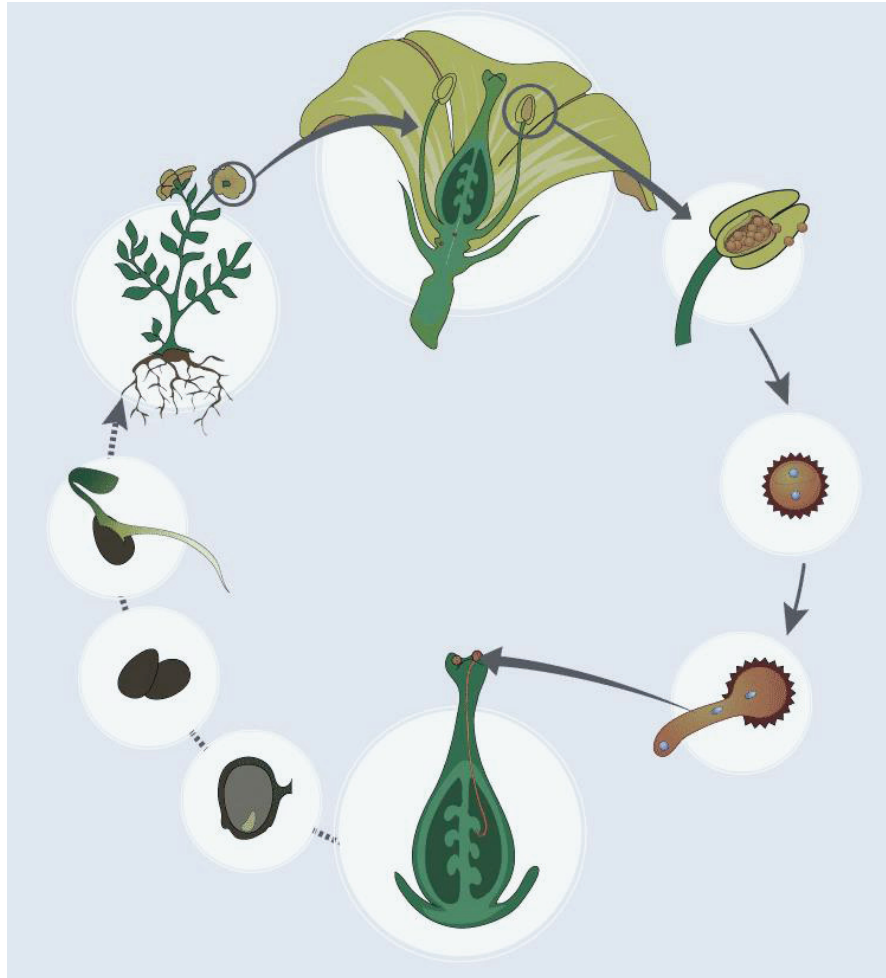


# Sexual Reproduction in Flowering Plants



For Quick Revision and Smart Practice

## NEET FAST FORWARD

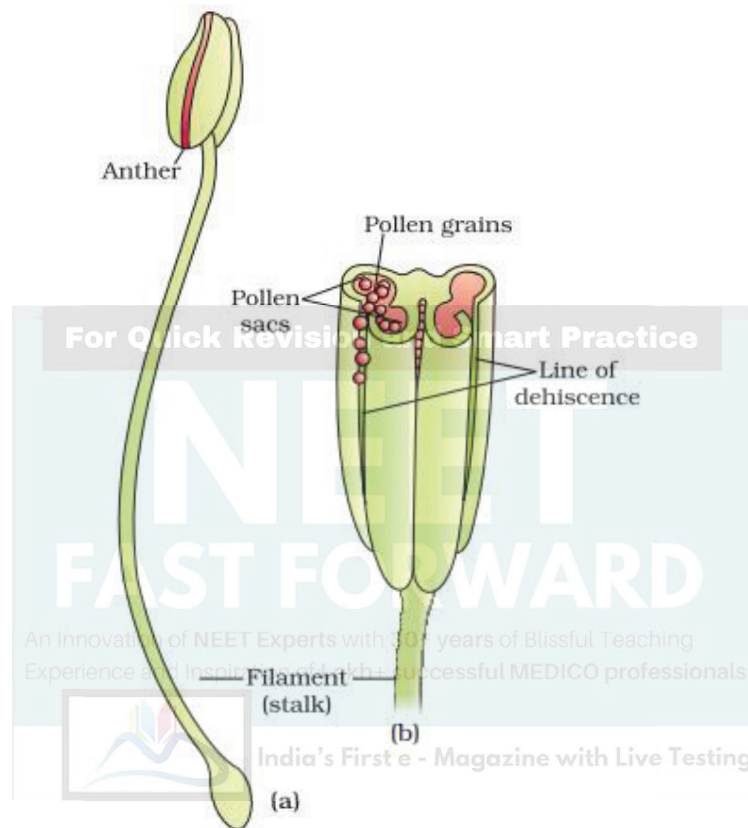
An Innovation of **NEET** Experts with 30+ years of Blissful Teaching  
Experience and Inspiration of Lakh+ successful **MEDICO** professionals



India's First e - Magazine with Live Testing



- Stamen consists of long and slender stalk called filament and generally bilobed anthers. Each lobe contains two theca (dithecious).
- The anther is four-sided structure consisting of four microsporangia, two in each lobes.
- Microsporangia develop further and become pollen sacs which contain pollen grains.
- A typical angiosperm anther is bilobed with each lobe having two theca, i.e., they are dithecous.
- The anther is a four-sided (tetragonal) structure consisting of four microsporangia located at the corners, two in each lobe.
- The microsporangia develop further and become pollen sacs.



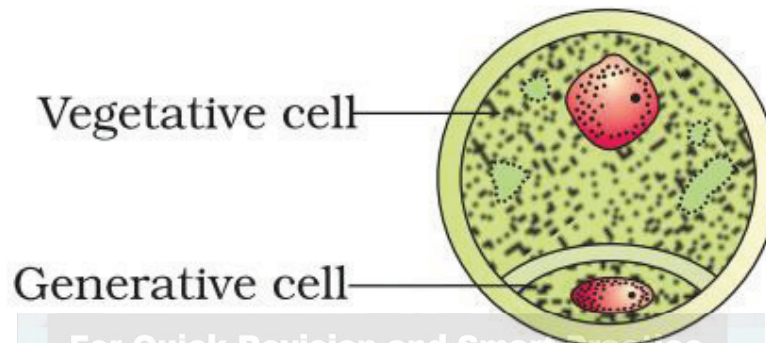
### Structure of microsporangium:

A typical microsporangium appears near circular in outline. It is generally surrounded by four wall layers: epidermis, endothecium, middle layers, and the tapetum. The outer three wall layers perform the function of protection and help in dehiscence of anther to release the pollen. The innermost wall layer is the tapetum. It nourishes the developing pollen grains. When the anther is young, a group of compactly arranged homogenous cells called the sporogenous tissue occupies the center of each microsporangium.

**Microsporogenesis:** The process of formation of microspores from a pollen mother cell through meiosis is called microsporogenesis. The microspores, as they are formed, are arranged in a cluster of four cells—the microspore tetrad. As the anthers mature and dehydrate, the microspores dissociate from each other and develop into pollen grains.

**Pollen grain:** The pollen grains represent the male gametophytes. Pollen grains are generally spherical, measuring about 25-50 micrometers in diameter. It has a prominent two-layered wall. The hard outer layer called the exine is made up of sporopollenin, which is one of the most resistant organic materials known. It can withstand high temperatures and strong acids and alkali. The pollen grain exine has prominent apertures called germ pores. The inner wall of the pollen grain is called the intine. It is a thin and continuous layer made up of cellulose and pectin.

When the pollen grain is mature, it contains two cells, the vegetative cell and generative cell. The generative cell is small and floats in the cytoplasm of the vegetative cell.



For Quick Revision and Smart Practice

### **The Pistil, Megasporangium (ovule) and Embryo sac:**

The gynoecium represents the female reproductive part of the flower.

**Monocarpellary or Multicarpellary:** The gynoecium may consist of a single pistil (monocarpellary) or may have more than one pistil (multicarpellary).

**Syncarpous or Apocarpous:** When there are more than one, the pistils may be fused together (syncarpous) or may be free (apocarpous).

**Each pistil has three parts:** The stigma, style, and ovary.

The stigma serves as a landing platform for pollen grains. The style is the elongated slender part beneath the stigma. The basal bulged part of the pistil is the ovary.

Inside the ovary is the ovarian cavity. The placenta is located inside the ovarian cavity. Arising from the placenta are the megasporangia, commonly called ovules.

### **The Megasporangium:**

The ovule is a small structure attached to the placenta by means of a stalk called funicle. The body of the ovule fuses with funicle in the region called hilum. Each ovule has one or two protective envelopes called integuments. Integuments encircle the ovule except at the tip where a small opening called the micropyle is organized. Opposite the micropylar end is the chalazal end. Enclosed within the integuments is a mass of cells called the nucellus. Located in the nucellus is the embryo sac or female gametophyte.

### **Megasporogenesis:**



**TO DOWNLOAD/VIEW FULL FILE**



[Download Android App](#)

Fast Forward a work of Adhipati Creations that provides the best app for NEET, JEE, BITSAT, CUET and CBSE exam preparation.