A flower plant : are the dominant plants today are occur as trees , shrubs , vines and garden plants .

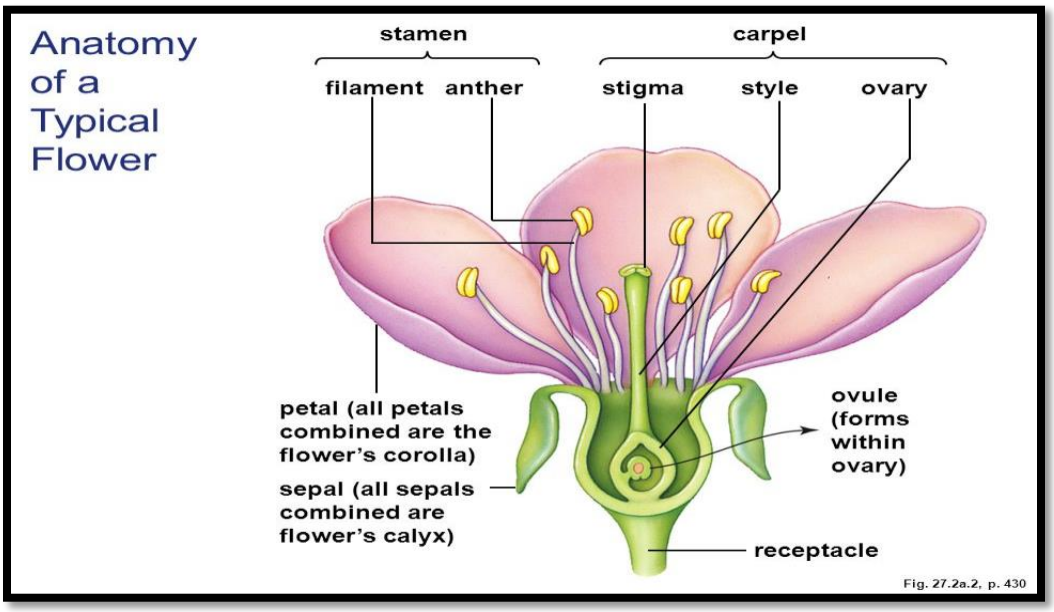

Figure (1-5) structures on model of a flower

Structures of a flower consists of :

- **Receptacle** : the part of stalk to which the flower parts are attached .
- **Sepals** : an outer most whorl of modified leaves , collectively called the calyx , sepals are green in most flower , it has function to protect a bud before opening .
- **Petals** : usually colored leaves that collectively constitute the corolla .
- **Stamen** : consisting of A swollen terminal called **anther** and the slender supporting called **filament** , the anther contain two pollen sacs , every pollen sac contains microspores which are developed into (pollen grains) (microgametophtes) .

  Pollen grain has two cells :
  - Tube cell : is the larger cell .
  - Generative cell : is the smaller cell .

When the pollen grain germinates , the tube cell gives rise to the pollen tube and by the division of the pollen grains generative cell it will produce two sperm cells.

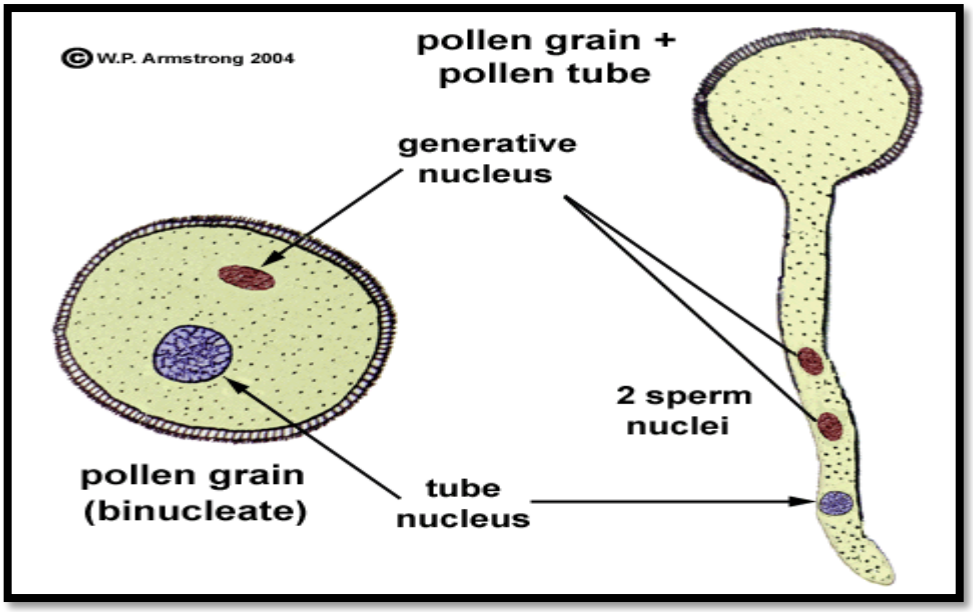

Figure (2-5) mature microgametophtes

- **Pistil :** also called a carpel , this structure consists of :
  - **a- Ovary :** swollen basal enlarged part of the pistil **.**
  - **b- Stigma :** terminal part like the sticky knob which helps the pollen grain for coherence **.**
  - **c- Style :** longer and slender which joins between stigma and ovary .

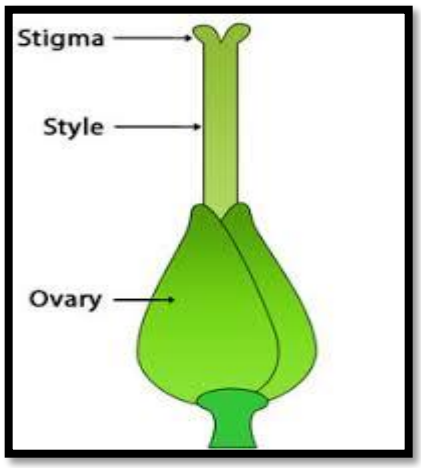

Figure (3-5) consists of pistil

The ovary contains an (ovule structure) and the ovule structure contains a (mega spore). Mega spores undergoes three mitotic division to produce a seven cells with eight nuclei structure which is called an embryo sac or mega gametophytes. One of these cells called **egg cell** , three other cells are called **antipodal cells** and the largest one contains two polar nuclei is called **polar cell** , the two other cells are called **synergids cell** .

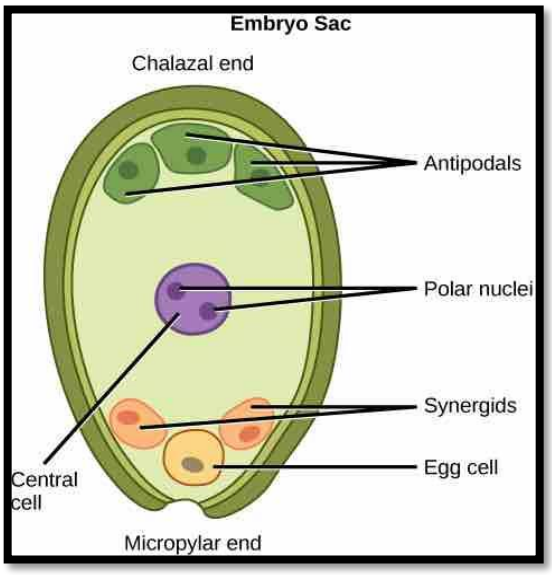

Figure (4-5) Embryo sac

Pollination operation :

Pollination : Transfer of the pollen grain from the anther to the stigma .

The pollen tube it will form ,as it grows the pollen tube passes through the stigma and grow through the style into the ovary and the two sperm cell will migrate through the pollen tube into the embryo sac .

Fertilization :

After Pollination and after the passing of pollen tube to the stigma ,flowering plants practice (double fertilization) and one sperm fertilizes the egg and the other joins with the two polar nuclei to form endosperm which severs as food for the developing embryo . finally the ovary becomes a fruit and ovule becomes a seed , the seed contains an embryonic sporophyte and stored food .