

# Sexual Reproduction in Plants

## 1. What is pollination?

- The transfer of pollen grains from anther to stigma of the gynoecium is called pollination.

## 2. What is fertilization?

The fusion of male and female gametes is called fertilization.

## 3. What is thalamus ?

- The upper swollen part of the pedicel is called thalamus.

## 4. Describe flower and its parts ?

- There are Four parts in flower. They are

1. Sepals (calyx)
2. Petals (corolla)
3. Androecium
4. Gynoecium

### Sepals (calyx):

Sepals are green in colour. It is the first whorl of the flower. sepals given protection to the flower.

### Petals (corolla):

It is the second whorl of the flower these are usually bright in colour (red, yellow) which helps to attract insects for cross pollination.

### Androecium:

It is third whorl of the flower. It consists of stamens. Each stamen consists of two parts called anther and filament. Another consists of pollen grains which are formed by pollen mother cells.

### Gynoecium:

It is fourth whorl of the flower. It is also known as pistil. It consists of three parts called stigma, style and ovary. Inside the ovary, future seeds known as ovules are present

## 5. Describe the structure of ovule or explain how female gametes are formed?

1. Ovule is a female gamete that develops from a cushion-like part of the ovary called placenta.
2. Ovule is connected to the placenta through stalk-like structure called funicle.
4. The tissue enclosed inside the ovule is called nucellus.
5. Ovule is covered with layer called integument, they are outer integuments, and inner integuments.
6. Two integuments, leave a small pore known as micropyle.
7. Basal part of ovule where two integuments, arise is known as "chalaza"
8. From the cells of the Nucellus one cell differentiates as megaspore mother cell which is diploid.

9. The megaspore mother cell divides by meiosis to form four megaspores out of which only one develops as embryo sac. This is haploid and also called female 'gametophyte'.

10. Inside the ovule the megaspore cell divides mitotically three times and from '8' nucleus which will be total '7' cells arranged in three groups in mature embryo sac.

11. They are 'one' Egg (female gamete) " two " synergids one central cell called secondary nucleus and 'three' antipodals. While all the cells are in haploid conditions ('n') only the secondary nucleus is diploid ('2n').

## Fill in the blanks

1. Floral structure arise on a swollen part of pedicel known as \_\_\_\_\_
2. The '3n' nucleus is formed from fusion of \_\_\_\_\_ nucleus with male nucleus inside embryo sac.
3. Root part is represented in mature embryo by \_\_\_\_\_
4. The first diploid condition in embryo sac after fertilization is seen in \_\_\_\_\_
5. Carpels are present in \_\_\_\_\_
6. The diploid cell inside the nucleus that undergo meiosis to give rise to embryo sac is known as \_\_\_\_\_
7. The flower with stalk is called \_\_\_\_\_
8. The flower without stalk is called \_\_\_\_\_
9. The study of pollen grains are called \_\_\_\_\_
10. Gynoecium is also known as \_\_\_\_\_
11. The cushion-like pad present in the ovule is called \_\_\_\_\_
12. Stamen consists of \_\_\_\_\_ and \_\_\_\_\_
13. Synergids is also known as \_\_\_\_\_ helper cells
14. Pollen tube have \_\_\_\_\_ nuclei
15. Endosperm is \_\_\_\_\_ in state

## ANSWER

1. Thalamus
2. Secondary
3. Radicle
4. Zygote
5. Pistil /gynoecium
6. Megaspore mother cell
7. Sessile flower
8. Pedicellate flower
9. Palynology
10. Pistil
11. Placenta
12. Anther and filament
13. Helper
14. Two male
15. "3n" triploid