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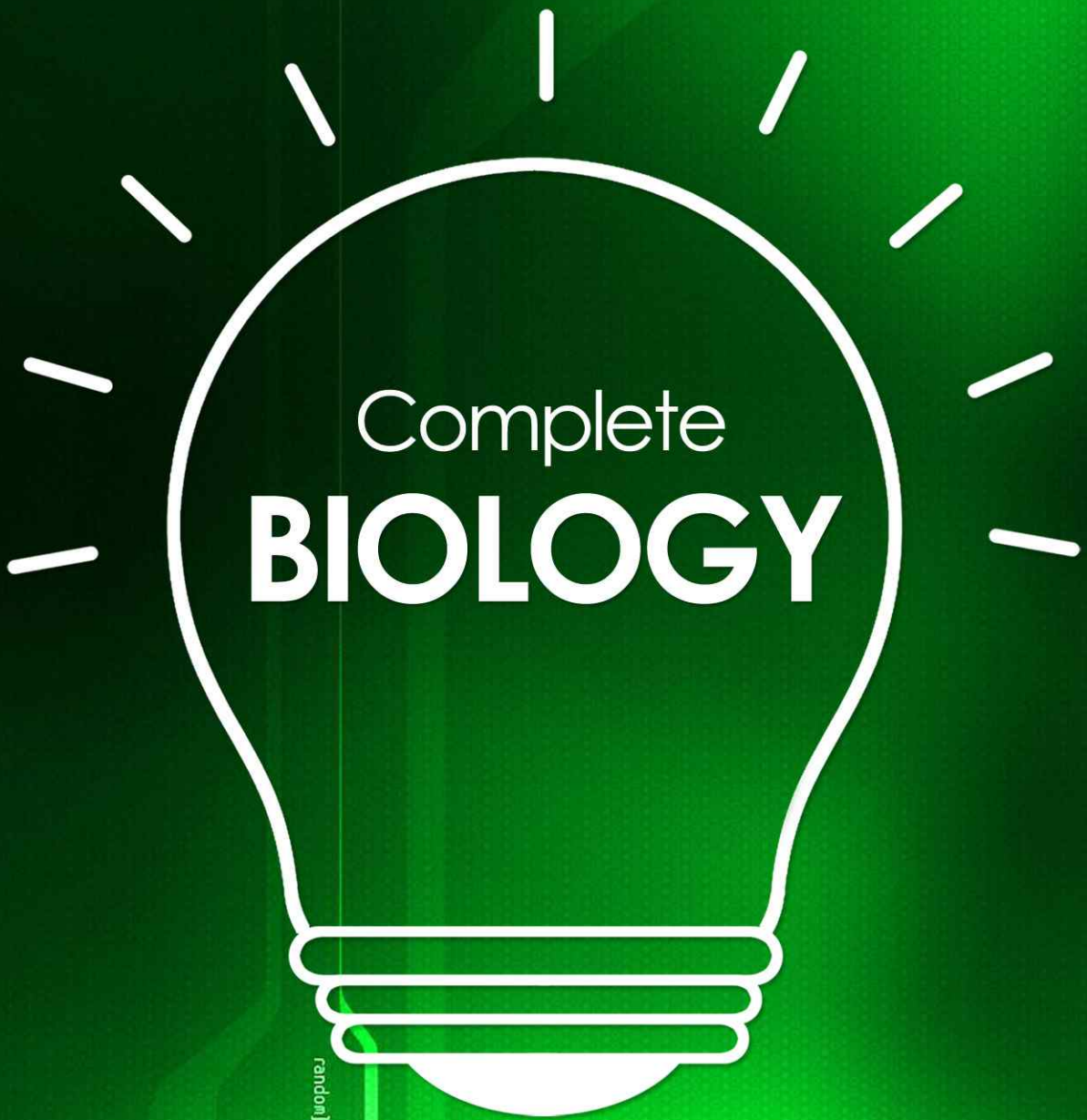

Complete BIOLOGY

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CLASS 11&12th

Learning Inquiry
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CLASS 12th

Sexual Reproduction in Plants

01. Introduction

The process of reproduction take place in this plant through a special structure, called **flower** **Calyx**, **Corolla, Androecium** and **Gynoecium** are present in the **typical** or **complete** flower.
The **Calyx** and **corolla** are termed **accessory whorls** of the flower. Because these structures do not participate in the process of reproduction, only helps. The **androecium** and **gynoecium** are known as **essential whorls,** because they are directly related with the reproduction.
Monocarpic plants:
The plants in which **flowering** and **fruiting** take place **many times i**n the entire life cycle are known as **polycarpic e.g Perennial plant.**

02. Reproduction in Flowering Plants [Embryology]

All the reproductive methods of plants are broadly categorized into **two type-**

- Sexual Reproduction
- Asexual Reproduction.

03. Sexual Reproduction

In **Angiosperm male and female gametes** are formed in male and female sex organs by the process of **meiosis.**
Both the gametes fuse together to from a **diploid zygote** which gives rise **embryo.** In means **the process in which embryo is formed by meiosis and fertilization is called Amphimixis.**

04. Male Reproductive Organ – Androecium

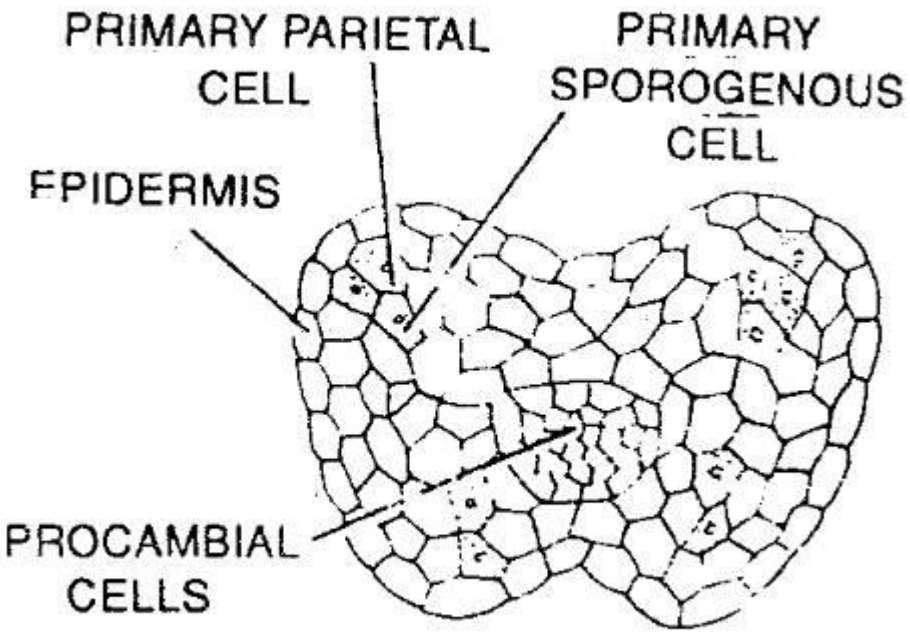
Male reproductive organ is called **androecium** and their unit is called **stamen.** Stamen is also known as **microsporophyll.**
A typical stamen is differentiates into there parts.–a long. thin structure is called **filament** which joins the stamen to the thalamus.
The free end of the filament, a swollen spore bearing structure is called **anther**
Another and filament are attached together with help of small region, called **connective.**
Connective contains **vascular tissues.** The main parts of the stamen is the **anther.**
Each **anther** generally **bilobed structure** i.e. anther has two **anther lobes.**
Each **lobe** of anther has **two chambers (Dithecous)** which are called **pollen sacs** or **microsporangia** or **pollen chambers.**
Therefore, a typical anther has four pollen sacs is called **tetrasporangiate.**
Pollen grains are formed inside the pollen sac through **the meiotic division** of **pollen mother cells.**

The development of **anther** in origin in **Eusporangiate** type i.e. It is developed form more then one archesporial cells.

The following structures are present in the anther:-

- **Epidermis:-**
  It is the outermost layer of anther. It is **single celled thick** and continuous layer
- **Endothecium:-**
- This layer is present below the epidermis. it is **single celled thick** layer.
- **Middle layer:-**
  Middle layer is consist of parenchymatous cells. This layer is **one to three celled thick structure.**
- **Tapetum:-** It is the inner most layer which acts as **nutritive layer**. It is known as **tapetum.** Pollen sacs surrounded by tapetum. This is also **single celled thick layer.**
- **Pollen sacs:** Four Pollen sacs are present in the anther. Pollen sacs are also known as **microsporangia**. Inside the pollen sacs, **microspores** are formed by the **meiotic division** of **microspore mother cells.**

05. Microsporogenesis :



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