

4. Describe three devices by which cross pollination is encouraged in Angiosperms by avoiding self pollination.

ANS :

Three outbreeding devices that flowering plants have developed:

- Receptivity of stigma and release of the pollen grain is not synchronized, i.e., stigma becomes receptive much before pollens are released or after they are released to avoid self-pollination.
- **Self-incompatibility**: A genetic method to prevent pollens from fertilizing ovules of the same flower by inhibiting their germination on stigma or pistil.
- **Production of unisexual flowers**: So that the male and female parts will be present on different plants i.e., **dioecious** or on different flowers in the same plant (monoecious).
- This prevents both autogamy and geitonogamy.

2. Explain the stages involved in the maturation of microspore into male gametophyte ?

ANSWER :-

- The nucleus of each microspore mother cell undergoes meiosis or reduction division and gives rise to four haploid nuclei. This process is called **microsporogenesis**.
- The four nuclei are arranged tetrahedrally and soon get enclosed with cell walls. These are now called microspores or pollen grains.
- These microspores further divide once by mitosis to form two-celled microspore. differentiates into pollen grain.
- Each microspore The pollen grains soon dry up and become powdery while the tapetum gets absorbed.
- The partition walls between the sporangia get destroyed and the microspores are liberated by the dehiscence of the anther.