7. What are chasmogamous flowers? Can cross-pollination occur in cleistogamous flowers? Give reasons for your answer.
Ans: Chasmogamous flowers or open flowers in which anther and stigma are exposed for pollination. Cross-pollination cannot occur in cleistogamous flowers. These flowers remain closed thus causing only self-pollination. In cleistogamous flowers, anthers dehisce inside the closed flowers. So the pollen grains come in contact with stigma. Thus there is no chance of cross¬pollination, e.g., Oxalis, Viola.

8. Mention two strategies evolved to prevent self-pollination in flowers.
Ans: Continued self-pollination decreases the vigour and vitality of a particular race. Thus, flowering plants have developed many devices to discourage self-pollination and to encourage cross-pollination.
Dichogamy and self-sterility are.two most common devices that ensure cross-pollination. Dichogamy - Maturation of anther and stigma at different times in a bisexual flower prevent self-pollination.
Self-sterility (or self-incompatibility) - Due to the presence of self-sterile gene in some flowers, pollen grains do not germinate on the stigma of that flowers. e.g.,- tobacco, potato.

9. What is self-incompatibility? Why does self-pollination not lead to seed formation in self-incompatible species?
Ans:
When the pollen grains of an anther do not germinate on the stigma of the same flower, then such a flower is called self-sterile or incompatible and such condition is known as self incompatibility or self-sterility.
The transference of pollen grains shed from the anther to the stigma of the pistil is called pollination. This transference initiate the process of seed formation. Self-pollination is the transfer of pollen grain shed from the anther to stigma of pistil in the same flower. But in some flower self¬pollination does not lead to the formation of seed formation because of the presence of same sterile gene on pistil and pollen grain.

10. What is bagging technique? How is it useful in a plant breeding programme?
Ans: It is the covering of emasculated flowers (removal of anthers in bud condition from a bisexual flower by a bag of butter paper or polythene in their bud condition i.e., before anthesis) to prevent contamination of its stigmas with unwanted pollens. When the stigmas of emasculated flowers mature the bags are removed, stigmas are dusted with pollen grains of desired male . plants by means of a presterilized brush and flowers are rebagged till fruit develop. This technique is mainly used in artificial hybridization. Plant breeders often use this technique to prevent the contamination of stigma of the flowers from unwanted pollen grains.

11. What is triple fusion? Where and how does it take place? Name the nuclei involved in triple fusion.
Ans: Fusion of second male gamete with die two polar nuclei

located in the central cell to form the triploid primary endosperm nucleus (PEN) is called triple fusion or vegetative fertilization. This process takes place in the embryo sac. After reaching the ovary, pollen tube enters into the embryo sac from the micropylar end. After penetration, the tip of the pollen tube ruptures releasing the two male gametes. The one male gamete fuses with the egg to form the diploid zygote. This process is called syngamy and the other male gamete fuses with the two polar nuclei to form the triploid primary endosperm & this process is known as triple fusion. These two events of fertilization constitute the process of double fertilization.

12. Why do you think the zygote is dormant for sometime in a fertiUsed ovule?
Ans: The zygote after a period of rest develops into embryo. Most zygotes remain dormant till certain amount of endosperm forms. They do so, to provide assured nutrition to the developing embryo.

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