

PLANT REPRODUCTION ANSWERS

1. Please refer to your notes or textbook.
2. The male gamete or pollen will be found in the anther, and the female gamete or ovum will be found in the ovary.
3. No. Many flowers do contain both male and female structures. However, some flowers contain only male structures and are termed staminate flowers, and other flowers containing only female structures are termed pistillate flowers.
4. Self-pollination is the fertilisation process which occurs between the ovum and the pollen on the same plant. Cross-pollination is the fertilisation of an ovum by pollen of another plant of the same species.
5. Water, wind, birds, insects, gravity.
6. Self-pollination does not require external agents such as insects, but it does not give the plant a larger degree of genetic variation as may be needed in changing conditions. Cross-pollination, on the other hand, does require external agents of pollination such as insects and birds, but provides greater genetic variation in the offspring.
7. Dicotyledon seeds (e.g. bean, pea) are in two parts, and on germination, two seed-leaves are produced. Monocotyledon seeds (e.g. corn, wheat) have one part, and produce only one seed-leaf on germination.
8. (a) A fruit is produced only by flowering plants (angiosperms). It is the ripened ovary of a plant which includes the seed. The seeds are matured ovules within the ovary.
8. (b) Cherries, tomatoes, watermelons, corn kernels.
8. (c) The fruit is a protective covering to aid survival. Also if an animal such as a bird eats the fruit, digestive enzymes may play a role in assisting germination, with the added bonus of fertiliser from the faeces.
9. Seed germination requires water. Other factors that may be necessary are extremes of temperature. Some seeds from plant nursery may require refrigeration if the plant is from a cold climate or on the other hand, a few minutes of exposure to boiling water to simulate bushfire before they germinate.
10. (a) Within a plant's life cycle, it may undergo both asexual and sexual generations.
10. (b) Sporophyte.