Review Questions
Module 2
2.1 Sexual or Seed Propagation
Chapters 4&5
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1. When are homozygosity and heterozygosity desired conditions?
Homozygosity leads to uniformity, which is necessary in agricultural crops.
Genetic diversity, which can come from heterozygosity, is necessary in order for plants to be able to adapt to changing conditions.

2. What is the role of sepals and petals in the reproduction process?
Sepals and petals are accessory organs because they are not directly involved in pollination; they are attractants or a landing platform for pollinators.

3. What four parts make up the carpel, and which develops into the seed?
Stigma, style, ovary, and ovule make up the carpel. The ovary develops into the fruit and the ovule (enclosed within the ovary) develops into the seed.

4. Can a flower on a dioecious plant be monoclinous?
No, in a monoclinous flower, both carpel and stamen are present in the same flower, whereas flowers of a dioecious plant are only male or female (having either functioning stamens or carpels, but not both).

5. How may wind-pollinated flowers be morphologically different than those pollinated by butterflies or bees?
Wind-pollinated flowers must have exerted carpels or stamens (above the level of the flower) or have no petals or sepals.
Flowers in which the parts are free are usually pollinated by butterflies or bees, and color makes a great deal of difference in bee- and butterfly- pollinated flowers, so they would likely be more colorful than wind-pollinated flowers.

6. Describe the process of pollination.
Pollen lands on surface of the stigma (usually sticky or hairy) via some pollinating agent. The pollen germinates and the sperm is carried to the egg. The pollen tube bursts and releases the sperm into the egg. In plants, there is double fertilization where an endosperm and embryo are both produced.