

Name \_\_\_\_\_

Score \_\_\_\_\_/100 = \_\_\_\_\_%

### Chapter 5: Plant Propagation – Answer Key

There might be more than one correct answer to the multiple-choice questions. Please **circle all** the answers that apply. Before each letter chosen, indicate the page or pages where the answer was found.

1. Write (T) True or (F) False next to each statement. (5 points)

F Two factors shorten seed life: high moisture and low temperatures.

F All open-pollinated cultivars are considered heirlooms.

T For germination to occur, seeds must be physically and physiologically ready to break dormancy.

T In mechanical scarification a seed is filed with a metal file, nicked with a knife, cracked with a hammer, or rubbed with sandpaper to weaken the coat so water can enter and begin the germination process.

T Because germinating media mixes have little fertilizer, seedlings must be watered with a diluted fertilizer solution soon after they emerge.

2. The ideal characteristics of a germinating medium are: (5 points)

A. Fine and uniform in texture, yet well aerated and loose.

B. Free of insects, disease organisms, and weed seeds.

C. Low in soluble salts.

D. Able to hold moisture yet drain well.

E. One mixture that possesses these characteristics is: a combination of 1/3 sterilized sand, 1/3 vermiculite or perlite, and 1/3 peat moss. P 114-115

3. What is “hardening” plants? (5 points)

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The process of slowing plant growth to withstand changes in environmental conditions that occur when transplants are transferred from a greenhouse or home to the garden. Page 118

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4. List the principle methods of asexual plant propagation. (5points)

- \_\_\_\_\_ **cuttings** \_\_\_\_\_
- \_\_\_\_\_ **layering** \_\_\_\_\_
- \_\_\_\_\_ **division** \_\_\_\_\_
- \_\_\_\_\_ **budding** \_\_\_\_\_
- \_\_\_\_\_ **grafting** \_\_\_\_\_

5. Write (T) True or (F) False next to each statement. (5 points)

- F**   Stem cuttings are not widely used and not an important type of cutting. **P 119**
- T**   Remove flowers and flower buds from stem cuttings. **P 119**
- T**   Typical softwood stem tip cuttings tend to root in 2 to 5 weeks. **P 120**
- T**   Hardwood cuttings of deciduous species are one of the least expensive, easiest methods of vegetative propagation. **P 121**
- T**   It is important to avoid taking root cuttings when the parent plant is actively producing new shoots. **P 122**

6. Use table 5.3 to find the method of propagation for impatiens. (5 points)

\_\_\_\_\_ **C- softwood or leaf cuttings, and S-seed** \_\_\_\_\_ **P 127**  
\_\_\_\_\_

7. Fill in the blanks to complete the sentences. (5 points)

- A. \_\_\_\_\_ **Stolons** \_\_\_\_\_ are horizontal stems that grow above the ground.
- B. \_\_\_\_\_ **Rhizomes** \_\_\_\_\_ are horizontal stems that grow below the ground.
- C. \_\_\_\_\_ **Ajuga** \_\_\_\_\_, \_\_\_\_\_ **Bermuda grass** \_\_\_\_\_, and \_\_\_\_\_ **mint** \_\_\_\_\_ are 3 plants that layer naturally (asexually propagate) via stolons. **P 129**

8. Choose the letter that corresponds with each number. (5 points)

Runner  E

Offsets  D

Bulbs  B

Corms  A

Tuberous stems and roots  C

P 133-134

A. A solid stem structure with distinct nodes and internodes

B. Can form asexually beside the originally planted parent

C. Thickened underground fleshy structures that contain stored food and may produce new roots, shoots, and plants.

D. Plants with rosetted stems often reproduce by forming new shoots at their base or in leaf axils.

E. Plantlets at tips may be rooted while still attached to the plant.

9. Write (T) True or (F) False next to each statement. (5 points) P 134-138

A.  T  Plants with more than 1 rooted crown may be separated and the crowns planted separately.

B.  T  Division requires plant parts to be cut into sections for propagation.

C.  F  Germinating and transferring are methods of asexual plant propagation that join plant parts so they will grow as one plant.

D.  T  Budding involves removing a bud or small piece of bark from the scion and grafting it onto root stock.

E.  T  Budding and grafting techniques are used to propagate cultivars that do not reproduce well by cuttings, or other sexual methods-or whose own root systems are inadequate.

**The following questions can be answered from the PowerPoint presentation or the Handbook.**

10. Write (T) True or (F) False next to each statement regarding seed (sexual propagation). (5 points)

A.  T  Seeds comprise three parts: the outer seed coat, the endosperm, and the embryo.

B.  F  Seed life can be shortened by low moisture and low temperature storage conditions.

C.  T  Open-pollinated seeds may help maintain genetic diversity within a species.

D.  T  All seeds need to be scarified to germinate.

E.  F  Seeds that do not germinate quickly tend to be prone to disease problems.

11. What may cause problems with seed viability: List 5 (5 points)

- A. Environmental conditions
- B. Lack of compatible pollen (self-infertile or the only plant for miles around).
- C. Lack of pollinators
- D. Pest infestation or plant age
- E. Length of seed viability varies greatly depending upon species

12. Write (T) True or (F) False next to each statement regarding cuttings and division (asexual propagation). (5 points)

- A. T It is useful for plants that may have complex seed dormancy problems.
- B. T It is the best way to produce cultivars that closely resemble the parent plant.
- C. F In some cases, this method of reproduction may produce a smaller plant or a plant that blooms late.
- D. T This method may transmit viruses.
- E. T It may require use of hormones for difficult to root plants.