

2017 Winter Invite Nursery/Landscape CDE Exam

1. A sandy clay soil would be classified as a :
 - A. Fine texture soil
 - B. Medium texture soil
 - C. Moderately coarse soil
 - D. Coarse soil
2. The pH of peat moss is normally in the _____ range.
 - A. 2.0 to 2.5
 - B. 4.0 to 4.5
 - C. 6.0 to 6.5
 - D. 8.0 to 8.5
3. A home owner wished to keep there lawn grass height at 2 inches. What is the recommended growth that is needed before mowing is required?
 - A. ¼ inch
 - B. ½ inch
 - C. 1 inch
 - D. 1 ½ inches
4. A sod farm cuts their sod in 2 foot by 6 foot rolls and stacks 64 rolls on a pallet. How many square feet will a pallet of sod cover?
 - A. 364
 - B. 764
 - C. 768
 - D. 864
5. Which of the following plants are most closely related? *Acer rubrum*; *Acer saccharum*; *Quercus rubra*; *Rosa* spp.
 - A. *Acer rubrum* and *Quercus rubra*
 - B. *Acer rubrum* and *Acer saccharum*
 - C. *Acer saccharum* and *Quercus rubra*
 - D. *Acer rubrum* and *Rosa* spp.
6. Which of the following is a reason to use mulch around newly planted shrubs?
 - A. It holds moisture in the soil
 - B. It reduces freezing and thawing
 - C. It improves the landscape appearance
 - D. All of these reasons
7. _____ is the term applied to the length of time that light shines on a plant each day.
 - A. phototropism
 - B. photoperiod
 - C. light compensation point
 - D. light saturation point
8. There is a point in a plant at which the amount of food produced by photosynthesis equals the amount used in respiration. This is called
 - A. phototropism
 - B. photoperiod
 - C. light compensation point
 - D. light saturation point

9. Post-emergence application of herbicides must be:
- A. applied before the crop is up
 - B. applied before the weeds are up
 - C. must use a lower concentration of chemical
 - D. very selective in terms of the chemical used
10. To prevent drift a chemical applicator:
- A. should hold the sprayer further away from the plants
 - B. should use spray nozzles that apply large droplets of spray
 - C. should use only non-systemic sprays
 - D. should spray only at night
11. The major auxin produced in plants is:
- A. Indole-3-butyric acid (IBA)
 - B. Naphthalene acetic acid (NAA)
 - C. Indole-3-acetic acid (IAA)
 - D. Ethylene
12. A 50 pound bag of 5-10-15 contains ____ pounds of nitrogen.
- A. 2.5
 - B. 5
 - C. 10
 - D. 30
13. The growing point of most dicots is best described as the
- A. Cotyledon
 - B. Internode
 - C. Vascular tissue
 - D. Apical meristem
14. If a grower adds any material, such as sand or soil, to a prepared peat-lite mix, the materials should be:
- A. screened to remove rocks and sticks
 - B. mixed thoroughly with superphosphate
 - C. steam sterilized or fumigated
 - D. drenched heavily with captan
15. If a herbicide is to be applied at 2 pints to the acre and the sprayer applies 10 gallons of water to the acre, how much chemical should be mixed in each gallon of water?
- A. 2 pints
 - B. 20 pints
 - C. 0.2 pints
 - D. 5 pints
16. A white wooly insect that resembles a ball of cotton and usually infects at the nodes of plants is the:
- A. white fly
 - B. mite
 - C. mealy bug
 - D. aphid
17. Easter lily bulbs should be planted so that the tip of the bulb is _____ inches below the medium surface.
- A. 1
 - B. 2
 - C. 3
 - D. 4

18. This element is essential for strong stems, strong roots, and deep flower color. A deficiency in plants shows up as weak stems and a yellowing and browning of leaves at their tips and edges.
- A. nitrogen
 - B. iron
 - C. phosphorous
 - D. potassium
19. The movement of water, soluble organic materials synthesized within the cells, and nutrients from one part of a plant to another is termed _____.
- A. translocation
 - B. assimilation
 - C. absorption
 - D. photoperiodism
20. Pasteurization of root media at 180°F for 30 minutes would
- A. kill most plant viruses
 - B. kill most weed seeds
 - C. kill most pathogenic fungi
 - D. all of the above
21. Insecticides with high dermal effect are at risk to the body by:
- A. being breathed in
 - B. contact with the skin
 - C. swallowing
 - D. drinking water
22. Which of the following would be classified as an early Spring blooming shrub?
- A. American highbush cranberry
 - B. Azalea
 - C. Goldflame spirea
 - D. Potentilla
23. Which of the following would do well in the shade?
- A. Hosta
 - B. Purple coneflower
 - C. Gaillardia
 - D. Shasta daisy
24. Which of the following is planted primarily for its leaf color?
- A. Sweet alyssum
 - B. Coleus
 - C. Gerbera daisy
 - D. Garden verbena
25. A leaf petiole is:
- A. the tip of the leaf
 - B. the base plate of a leaf
 - C. attaches the leaf to the stem
 - D. the spine of the leaf

26. Which of the following weeds has an underground stem called a stolon?
- A. Chickweed
 - B. Dandelion
 - C. Foxtail
 - D. Quackgrass
27. A set of landscape plans uses a scale of 1" = 10'. How big would you draw a tree with an expected radius of 15 feet?
- A. 1 inch
 - B. 1.5 inches
 - C. 3 inches
 - D. 15 inches
28. Which of the following statements is true about balled and burlapped plants when compared to bare root plants?
- A. They cost more and can be planted only in the fall
 - B. They cost less and can be planted only in the fall
 - C. They cost more and can be planted later in the spring season
 - D. They cost less and can be planted later in the spring
29. A stem with many vascular bundles would be a
- A. dicot stem
 - B. monocot stem
 - C. both a dicot and a monocot stem
 - D. neither a dicot or a monocot stem
30. When sprayed on broadleaf plants, 2,4-D will
- A. prevent photosynthesis
 - B. upset cell division, respiration, and food reserves
 - C. destroys sprouting seeds
 - D. doesn't affect broadleaf plants
31. When should a lawn be renovated?
- A. When more than ½ of the lawn grass plants are dead.
 - B. When the pH level is too low
 - C. When the thatch buildup is too heavy
 - D. When the lawn is infested with dandelions
32. "Scalping" is a term used in:
- A. turf grass mowing
 - B. pruning
 - C. propagation
 - D. landscape drawing
33. Which soil will drain best, if all other conditions are the same?
- A. clayey
 - B. sandy
 - C. sandy clay
 - D. loamy
34. The soluble salt content of soil in plant containers can usually be reduced by:
- A. stratification
 - B. scarification
 - C. leaching
 - D. adding lime

35. One reason modern horticultural fabrics used in landscaping are said to be better than black polyethylene film is they:
- A. prevent moisture from penetrating too deeply
 - B. make a better base for rock mulch
 - C. allow the exchange of gases between soil and air
 - D. completely control weeds
36. Which term is not a principle of landscape design?
- A. simplicity
 - B. realism
 - C. balance
 - D. proportion
37. Which of the following is generally true about shrubs that bloom in early spring?
- A. They bloom on new wood.
 - B. They bloom on spurs generated in late winter
 - C. They bloom on old wood
 - D. The earlier they bloom, the more profuse the bloom.
38. The first part of the new plant to emerge from the seed is :
- A. endosperm
 - B. leaves
 - C. root
 - D. stem
39. When two separate parent plants are involved in the pollination process, it is known as:
- A. asexual pollination
 - B. bisexual pollination
 - C. cross pollination
 - D. self pollination
40. A size two container that is used for growing trees is _____ in size:
- A. 2 quarts
 - B. 2 gallons
 - C. 2 feet wide
 - D. 2 feet high

2017 Winter Invite Nursery/Landscape CDE Exam Key

1. A
2. B
3. C
4. C
5. B
6. D
7. B
8. C
9. D
- 10.B
- 11.C
- 12.A
- 13.D
- 14.C
- 15.C
- 16.C
- 17.B
- 18.D
- 19.A
- 20.A
- 21.B
- 22.B
- 23.A
- 24.B
- 25.C
- 26.D
- 27.C
- 28.C
- 29.B
- 30.B
- 31.A
- 32.A
- 33.B
- 34.C
- 35.C
- 36.B
- 37.C
- 38.C
- 39.C
- 40.B

2017 Winter Invite Nursery/Landscape Practicum
Use the Assessment and Solution Section of Scantron

POTTING SOIL PRACTICUM

1. You have ten large planters to plant. Each planter is two feet wide by three feet long. The planters need 24 inches of potting soil depth. What is the volume of soil needed for the ten planters?
 - A. 12 cubic feet
 - B. 24 cubic feet
 - C. 60 cubic feet
 - D. 120 cubic feet

2. You have 5 - 3 foot diameter planters. The planters need 18 inches of planting soil depth. What is the volume of planting soil needed? (volume = $\pi \times \text{radius squared} \times \text{height}$)
 - A. 12 cubic feet
 - B. 35 cubic feet
 - C. 53 cubic feet
 - D. 71 cubic feet

3. For the 15 planters in questions 1 and 2, how many yards of potting soil would you need to order? (Round up to nearest $\frac{1}{2}$ yard.)
 - A. 4 cubic yards
 - B. 6.5 cubic yards
 - C. 13 cubic yards
 - D. 16.5 cubic yards

4. If the cost of potting soil is \$30 for a cubic yard, how much will it cost to fill the 15 planters with potting soil?
 - A. \$120
 - B. \$155
 - C. \$195
 - D. \$390

5. Artificial potting soil is used instead of top soil to start plants because it is:
 - A. heavier
 - B. more fertile
 - C. disease free
 - D. cheaper

For question 6, use the following information:

The potting soil mix contains:

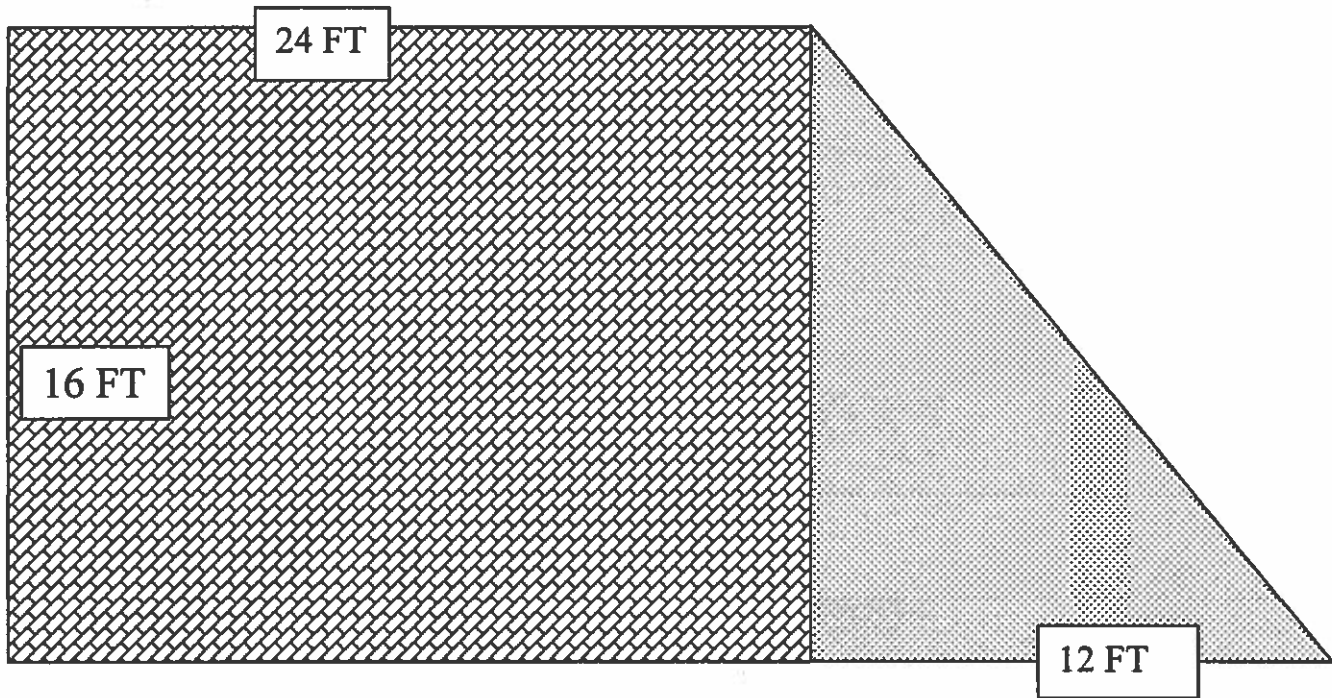
- 70% peat moss**
- 20% perlite**
- 5% vermiculite**
- 5% composted bark**

6. How many cubic feet of peat moss would be contained in one cubic yard of potting soil?
 - A. 19 cubic feet
 - B. 21 cubic feet
 - C. 24 cubic feet
 - D. 26 cubic feet

7. Square pots measuring 3 inches high and 4 X 4 inches wide will be used to grow geraniums. Each pot is filled to the top before planting. How many cubic feet of potting soil will be needed to fill 180 pots?
- A. 4 cubic feet
 B. 5 cubic feet
 C. 6 cubic feet
 D. 7 cubic feet
8. The potting soil costs \$2.89 per cubic foot. How much would the potting soil cost for each pot?
- A. \$ 0.04
 B. \$ 0.06
 C. \$ 0.08
 D. \$ 0.10

CALCULATING MATERIALS USING PAVERS PRACTICUM

A patio will be built according to the dimensions on the following diagram. The diagram is not drawn to scale. The square area will be paved with brick pavers. The triangle area will be paved with concrete. Answer the questions 9-16 below and on the next page.



9. What is the total square feet of this total patio (both pavers and concrete)?
- A. 96 square feet
 B. 384 square feet
 C. 480 square feet
 D. 576 square feet
10. The gravel base will be 4 inches deep, and will follow the same outline as the total patio. How many cubic feet of gravel will be required? (round to the nearest 10 cubic feet)
- A. 140 cubic feet
 B. 160 cubic feet
 C. 180 cubic feet
 D. 200 cubic feet

11. The Paver (rectangle) area will have a sand layer which will be 2.5 inches deep. How many cubic feet of sand will be required?

- A. 60 cubic feet
- B. 70 cubic feet
- C. 80 cubic feet
- D. 90 cubic feet

12. There are 4.5 pavers per square feet. How many pavers would you need to complete this project (the rectangle) if there is no waste?

- A. 1,262 pavers
- B. 1,484 pavers
- C. 1,646 pavers
- D. 1,728 pavers

13. If the pavers cost \$ 0.29 each for question #12, how much would the paver rectangle cost?

- A. \$ 468.08
- B. \$ 501.12
- C. \$ 538.40
- D. \$ 542.40

14. The contractor decides to put 1 foot bullet edgers around the entire outside circumference of the rectangle and triangle area. How many will he need with no waste?

- A. 96 edgers
- B. 106 edgers
- C. 116 edgers
- D. 126 edgers

15. If the bullet edgers cost \$0.69 each for question #14, how much would the bullet edgers cost?

- A. \$ 66.24
- B. \$ 73.14
- C. \$ 80.04
- D. \$ 86.94

16. The contractor estimates that 900 cubic feet of dirt will need to be moved. The dump truck can haul 9 cubic yards of dirt at one time. How many truck loads of dirt will need to be hauled? (round up to nearest whole number)

- A. 3 loads
- B. 4 loads
- C. 5 loads
- D. 6 loads

2017 Winter Invite Nursery/Landscape Practicum Key

POTTING SOIL PRACTICUM

- 1. D**
- 2. C**
- 3. B**
- 4. C**
- 5. C**
- 6. A**
- 7. B**
- 8. C**

CALCULATING MATERIALS USING PAVERS PRACTICUM

- 9. C**
- 10. B**
- 11. C**
- 12. D**
- 13. B**
- 14. A**
- 15. A**
- 16. B**

2017 Winter Invite Nursery/Landscape Practicum
Use the Assessment and Solution Section of Scantron

Key

POTTING SOIL PRACTICUM

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- A. 12 cubic feet
- B. 24 cubic feet
- C. 60 cubic feet
- D. 120 cubic feet

$$10 \times 2 \times 3 \times 2 = 120 \text{ cu. ft.}$$

2. You have 5 - 3 foot diameter planters. The planters need 18 inches of planting soil depth. What is the volume of planting soil needed? (volume = pi x radius squared x height)

- A. 12 cubic feet
- B. 35 cubic feet
- C. 53 cubic feet
- D. 71 cubic feet

$$5 \times 1.5^2 \times 1.5 \times 3.14 = 52.99 \text{ cu ft} \\ = 53$$

3. For the 15 planters in questions 1 and 2, how many yards of potting soil would you need to order? (Round up to nearest 1/2 yard.)

- A. 4 cubic yards
- B. 6.5 cubic yards
- C. 13 cubic yards
- D. 16.5 cubic yards

$$120 + 53 = 173 \text{ cu. ft.} \approx 6.5 \\ \frac{173}{27 \text{ cu ft}} = 6.41$$

4. If the cost of potting soil is \$30 for a cubic yard, how much will it cost to fill the 15 planters with potting soil?

- A. \$120
- B. \$155
- C. \$195
- D. \$390

$$6.5 \times \$30 = \$195$$

5. Artificial potting soil is used instead of top soil to start plants because it is:

- A. heavier
- B. more fertile
- C. disease free
- D. cheaper

For question 6, use the following information:

The potting soil mix contains: 70% peat moss
20% perlite
5% vermiculite
5% composted bark

6. How many cubic feet of peat moss would be contained in one cubic yard of potting soil?

- A. 19 cubic feet
- B. 21 cubic feet
- C. 24 cubic feet
- D. 26 cubic feet

$$\frac{27 \text{ cu. ft.}}{\text{cu. yd}} \times .70 = 18.9 \text{ cu ft or } 19 \text{ cu. ft}$$

Key

7. Square pots measuring 3 inches high and 4 X 4 inches wide will be used to grow geraniums. Each pot is filled to the top before planting. How many cubic feet of potting soil will be needed to fill 180 pots?

- A. 4 cubic feet
- B. 5 cubic feet
- C. 6 cubic feet
- D. 7 cubic feet

$$3 \times 4 \times 4 = 48 \times 180 = \frac{8640}{1728 \text{ cu in/cu ft.}} = 5 \text{ cu ft.}$$

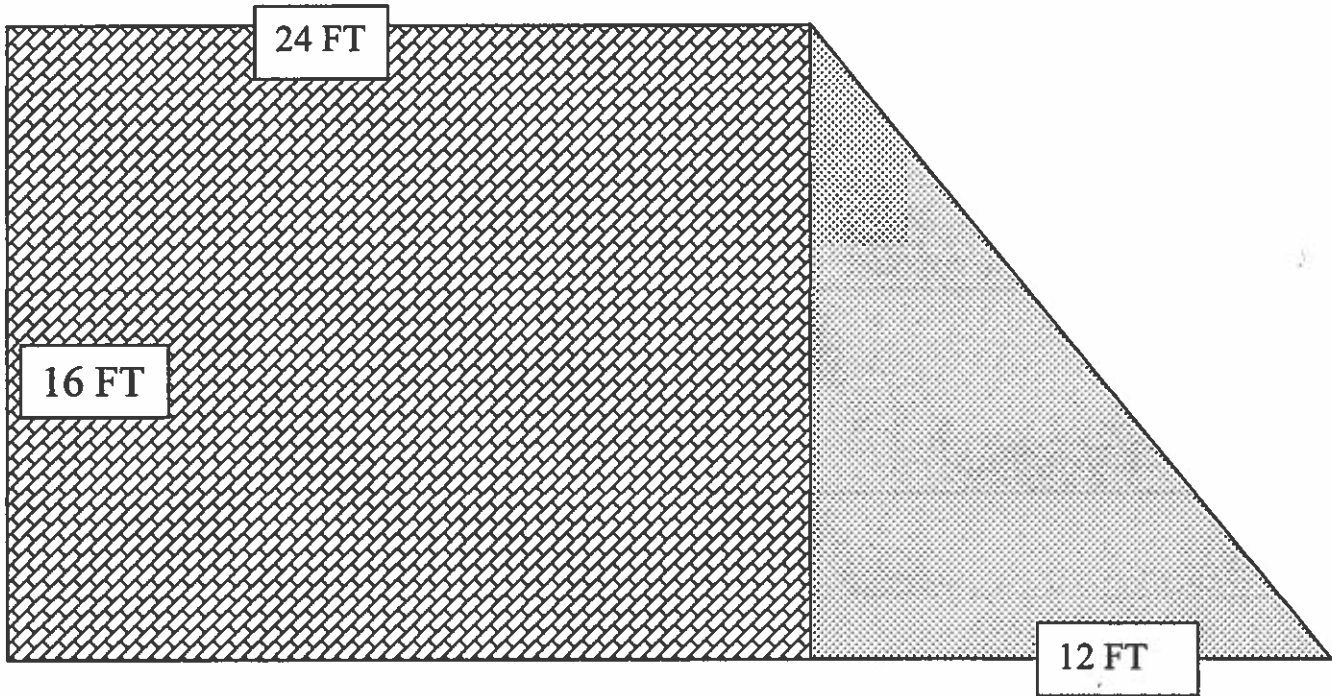
8. The potting soil costs \$2.89 per cubic foot. How much would the potting soil cost for each pot?

- A. \$ 0.04
- B. \$ 0.06
- C. \$ 0.08
- D. \$ 0.10

$$5 \times 2.89 = \frac{\$ 14.45}{180} = 0.08$$

CALCULATING MATERIALS USING PAVERS PRACTICUM

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9. What is the total square feet of this total patio (both pavers and concrete)?

- A. 96 square feet
- B. 384 square feet
- C. 480 square feet
- D. 576 square feet

$$24 \times 16 + \frac{1}{2} 16 \times 12 = 384 + 96 = 480 \text{ sq. ft.}$$

10. The gravel base will be 4 inches deep, and will follow the same outline as the total patio. How many cubic feet of gravel will be required? (round to the nearest 10 cubic feet)

- A. 140 cubic feet
- B. 160 cubic feet
- C. 180 cubic feet
- D. 200 cubic feet

$$480 \times \frac{1}{3} = 160$$

Key

11. The Paver (rectangle) area will have a sand layer which will be 2.5 inches deep. How many cubic feet of sand will be required?

- A. 60 cubic feet
- B. 70 cubic feet
- C. 80 cubic feet
- D. 90 cubic feet

$$384 \times \frac{2.5}{12} = 80$$

12. There are 4.5 pavers per square feet. How many pavers would you need to complete this project (the rectangle) if there is no waste?

- A. 1,262 pavers
- B. 1,484 pavers
- C. 1,646 pavers
- D. 1,728 pavers

$$384 \times 4.5 = 1728$$

13. If the pavers cost \$ 0.29 each for question #12, how much would the paver rectangle cost?

- A. \$ 468.08
- B. \$ 501.12
- C. \$ 538.40
- D. \$ 542.40

$$1728 \times .29 = 501.12$$

14. The contractor decides to put 1 foot bullet edgers around the entire outside circumference of the rectangle and triangle area. How many will he need with no waste?

- A. 96 edgers
- B. 106 edgers
- C. 116 edgers
- D. 126 edgers

$a^2 + b^2 = c^2$
 $12^2 + 16^2 = 144 + 256 = 400 = c^2$
 $20 = c$

$$24 + 16 + 24 + 12 + 20 = 96 \text{ edgers}$$

15. If the bullet edgers cost \$0.69 each for question #14, how much would the bullet edgers cost?

- A. \$ 66.24
- B. \$ 73.14
- C. \$ 80.04
- D. \$ 86.94

$$96 \times 69 = 66.24$$

16. The contractor estimates that 900 cubic feet of dirt will need to be moved. The dump truck can haul 9 cubic yards of dirt at one time. How many truck loads of dirt will need to be hauled? (round up to nearest whole number)

- A. 3 loads
- B. 4 loads
- C. 5 loads
- D. 6 loads

$$900 \times \frac{1 \text{ cu yd}}{27 \text{ cu ft}} = \frac{33.33 \text{ cu yd}}{9} = 3.7$$

or
4.0

2017 Winter Nursery/Landscape Problem Solving

1. A client wishes to have the most luxurious lawn available with a highly manicured look. This calls for a thick turfgrass with high maintenance required such as might be performed on a golf green. The turf should be cut with a ___mower to achieve the finely manicured look desired.

 - A. Vertical
 - B. Reel
 - C. Rotary
 - D. Flail
2. The recommended method of preparing disposable foam earplugs before inserting into the ear is to:

 - A. Apply one drop of baby oil before insertion
 - B. Fold the plug, compressing it with the thumb and forefinger before insertion
 - C. Roll the earplug in the hands and insert immediately
 - D. Moisten the earplug with water and insert immediately
3. The phenomenon of mushrooms growing in a circular pattern in the lawn is known as _____. It is a turfgrass disorder caused by fungi growing on deteriorating stumps or other wood buried underground.

 - A. Toad circles
 - B. Fairy ring
 - C. Frog steps
 - D. Hypericum blight
4. A garden center purchases \$1000 worth of plants from a wholesale nursery to resale to homeowners at their retail store. If the sales tax in this area is 5%, how much sales tax would the wholesale nursery charge the garden center?

 - A. \$5
 - B. \$50
 - C. \$0 – sales tax is only paid by the wholesaler on their production inputs
 - D. \$0 – sales taxes are paid by the ultimate consumer
5. Lady bug beetles are important beneficial insects in the landscape. They are especially known and valued for feeding on:

 - A. Aphids
 - B. Nematodes
 - C. Lace wings
 - D. Spiders
6. Which of these is correct about the depth at which you should plant bare root and containerized plants in the landscape?

 - A. Both bare root and container plants should be planted to the same depth they were originally growing.
 - B. Bare root plants should be planted deeper and container plants should be planted shallower than originally growing.
 - C. Container plants should be planted deeper and bare root plants should be planted shallower than originally growing.
 - D. Both bare root and container plants should be planted one to two inches deeper than they were originally growing.

7. Dead heading is a labor intensive process for landscapers as well as homeowners. The major objective of dead heading is to:
- A. Collect seeds for additional crops
 - B. Reduce maintenance costs
 - C. Control insects that feed on the heads
 - D. Encourage additional blooms to develop
8. Barbara is preparing to design the landscape around a family's newly built residence. In the initial interview, she is collecting information to design a landscape that will be most useful and enjoyable to the homeowners. Which question below is **NOT** relevant to information needed for this purpose?
- A. How many automobiles are in the family?
 - B. Where does the family like to go on vacation?
 - C. Does the family do outdoor entertaining?
 - D. What do family members enjoy doing outdoors?
9. A Hozon is a siphon-type device often used as a proportioning device by small scale growers to dispense _____ into irrigation water for nursery plants.
- A. Fertilizer
 - B. Pelleted limestone
 - C. Perlite
 - D. Thatch inhibitors
10. When should azaleas, hydrangeas, dogwoods, and other trees and shrubs that bloom on old wood (last year's growth) be pruned?
- A. Right after they bloom
 - B. Late winter
 - C. Early spring before bloom buds swell
 - D. Just after they are fertilized
11. At maturity, a large deciduous tree planted on the north side of a south facing home in the continental United States will:
- A. Provide summer afternoon shade
 - B. Protect the home from winter winds blowing from the north
 - C. Provide little or no shade for the home in summer
 - D. Provide cooling shade for the home during hot summer mornings
12. In which of the following situations does the Occupational Safety and Health Act (OSHA) protect workers from disciplinary action if they refuse to perform a job that may be hazardous?
- A. All the workers agree that the work is too difficult.
 - B. The workers have been informed of the type of disciplinary action that might be taken.
 - C. The workers are paid less than \$20 per hour.
 - D. The workers believe in good faith that they are in imminent danger and have informed their employer.

13. Which of these is the best description of an invoice?
- A. A bill sent to a supplier by the purchaser authorizing shipment of a product to the customer at a specified price and terms.
 - B. A document sent to a vendor requesting prices and quantities of materials available and terms of payment for selected products.
 - C. A document sent by the selling company describing their products or services for sale and terms of payment available.
 - D. A bill sent by the business providing a product or service to the purchaser which establishes an obligation on the part of the purchaser to pay for the products or services.
14. Which of these is a good procedure when planting large balled and burlapped trees in the landscape?
- A. Remove all the burlap and any string or rope around the ball or tree trunk prior to placing the tree in the planting hole.
 - B. Set the tree in the planting hole, then remove ropes or string securing the burlap to the root ball and roll the burlap back from the trunk.
 - C. At planting, leave the burlap and securing ropes and twine in place on the root ball for 6 to 12 months before removal.
 - D. At planting, re-tighten the rope or twine securing the burlap to the root ball; leave the burlap and securing ropes and twine in place for approximately 6 to 12 months or until the tree is well established.
15. A group of foliage plants were taken from the nursery where they had received optimal light, nutrition, water, and other conditions for rapid growth and shipped to a contractor installing these and other plants in a large indoor shopping mall. The plants were installed in the interiorscape project within 3 days of leaving the nursery. In a few weeks these once healthy plants began to show signs of failing health such as leaf drop, yellowing leaves, and general unthriftiness. Which of these is the likely problem?
- A. the plants were not properly acclimated
 - B. the plants were over fertilized
 - C. a disease from other plants in the interiorscape infected the new plants
 - D. the plants were getting too much light in the mall interiorscape

2017 Winter Nursery/Landscape Problem Solving Key

1. B
2. C
3. B
4. D
5. A
6. A
7. D
8. B
9. A
- 10.A
- 11.C
- 12.D
- 13.D
- 14.B
- 15.A