

**NATIONAL FFA NURSERY/LANDSCAPE
CAREER DEVELOPMENT EVENT
GENERAL KNOWLEDGE EXAM, 2016**

Directions: Select the best answer for each item and mark your selection on the answer sheet provided. Using a #2 pencil, completely darken in the letter on the answer sheet that corresponds to your answer for each item.

1. Which of these best describes an invasive plant species?
 - A. Any plant that invades the landscape from the native environment of the area.
 - B. Exotic plants that have become naturalized and damage the environment and landscape.
 - C. Native plants that grow out of control, becoming weed-like and damaging the environment.
 - D. Native plants of the US that have become naturalized.

2. A homeowner trained the branches of an upright ornamental shrub to grow flat against a brick wall while supported on a lattice. This special plant art form is known in horticultural terms as:
 - A. Wall art
 - B. Topiary
 - C. Lattice lining
 - D. Espalier

3. What is the most likely scenario for the damage shown in Figure 1, which shows a tree trunk with a large limb removed and bark stripped away underneath the cut?
 - A. The procedure for collar removal was not performed properly.
 - B. The sawing motion was too slow to allow for a clean cut.
 - C. The saw was dull, resulting in limb-tearing that ripped the bark.
 - D. The three-cut method of pruning was not performed properly.

4. 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

5. Variable costs in the operation of a nursery would include:
 - A. Land payments
 - B. Equipment payments
 - C. Nursery liners
 - D. Assets

6. 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



Figure 1

7. The phenomenon of mushrooms growing in a circular pattern in the lawn (Figure 2) 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



Figure 2

8. 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
9. Which of these would be involved in research and control of pathogenic organisms in plants? A plant :
- A. Ornithologist
 - B. Pathologist
 - C. Ichthyologist
 - D. Primatologist
10. Foundation plants of a home landscape should generally be arranged to move the viewer's eye to the front door of the home. This is an application of the principle of design termed:
- A. Diversity
 - B. Balance
 - C. Focalization
 - D. Simplicity
11. It is recommended to remove no more than ____ of the turfgrass leaf-blade height at each mowing.
- A. 1 inch
 - B. 1/8
 - C. 1/3
 - D. 4 inches
12. Soils should be tested for pH among other characteristics. The pH of soils should be adjusted, if necessary, for optimum plant growth and health. The primary purpose of adjusting soil pH is to:
- A. Control soil structure
 - B. Improve availability of plant nutrients
 - C. Control diseases caused by nematodes
 - D. Control soil moisture levels
13. 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

14. 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.
15. Suppose a homeowner applied the recommended rate of 10-10-10 and lime to her lawn, and during the next three days her area received a tremendous amount of rainfall. Which of these elements is most likely to be depleted by the rain?
- A. Nitrogen
 - B. Magnesium
 - C. Potassium
 - D. Phosphorus
16. The 'leaves' on junipers are best described as:
- A. Compound
 - B. Fascicles
 - C. Lenticels
 - D. Scales or awls
17. At the end of the year, employers issue their full-time and most part-time workers a _____. This is an IRS form which employers use to report wage and salary information for employees to the IRS. This form also tells the employee the amount of federal, state, and other taxes withheld from their paycheck. Employees use the information on this form to prepare their personal income tax return.
- A. W-2
 - B. W-4
 - C. Schedule C
 - D. Form 1040 or 1040EZ
18. When propagating plants by leafy stem cuttings, why should leaves that will be below the soil line, or touching the top of the soil, be removed during preparation of the cuttings?
- A. Leaves under or touching the soil may root, forming suckers that will compete with the main plant.
 - B. These leaves will sap energy from the cutting since they receive little or no sunlight.
 - C. They may decompose and spread disease to the cutting and remaining leaves.
 - D. All leaves, including these, should always be removed during cutting preparation.
19. A local nursery installed a system of growing plants in which one empty pot is buried in the field in soil up to the upper rim, then a containerized plant of slightly smaller pot size is set/nested into the pot in the soil. This system of nursery production is known as the _____ production system.
- A. Pot-in-pot
 - B. Healed-in
 - C. Pot nested
 - D. Soil-banked

20. The new growth on pine trees is known in horticultural terms as:
- Bud extensions
 - Candles
 - Adventitious twigs
 - Lateral scales
21. Which of the following is a properly written botanical name for Japanese maple?
- Japonica palmatum
 - JAPONICA PALMATUM
 - Acer Palmatum
 - Acer palmatum*
22. A type of landscaping that utilizes plants, materials, and techniques to conserve water and moisture in the landscape while reducing or eliminating the need for supplemental water from irrigation is:
- Pondscaping
 - Xeriscaping
 - Irriscaping
 - Waterscaping
23. A 50 pound bag of a 10-12-15 fertilizer contains ____ pounds of nitrogen.
- 2.5
 - 5
 - 10
 - 12
24. In which of these systems are plants most likely to have roots damaged during harvest, which may slow their growth when transplanted?
- Containerized plants grown in deep pots
 - Containerized plants in shallow pots
 - Bare root plants
 - Plants grown in the Root Control bag system
25. Which of these best describes the natural turfgrass propagation process shown in Figure 3?
- This grass is spreading through stolons.
 - This grass is spreading through rhizomes.
 - This grass is spreading through air layering.
 - This grass is reproducing through crown enlargement.
26. Dead heading is a labor intensive process for landscapers as well as homeowners. The major objective of dead heading is to:
- Collect seeds for additional crops
 - Reduce maintenance costs
 - Control insects that feed on the heads
 - Encourage additional blooms to develop

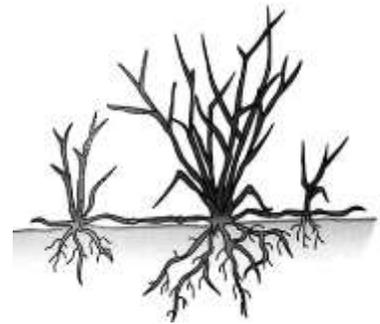


Figure 3

27. This tool is a basic landscape drawing tool. When used on a drawing board or drawing table with four 90-degree corners, it can be used to accurately draw horizontal or vertical lines. It can also be used as a base to support triangles and lettering templates.
- A. Easel
 - B. T-square
 - C. Compass
 - D. Protractor

28. The ____ view of a proposed landscape project, as shown in Figure 4, allows better visualization of the designer's intentions than any other view, with the exception of a 3-D model of the project.
- A. Plan
 - B. Elevation
 - C. Plot
 - D. Perspective



Figure 4

29. Items in the landscape such as walls, water features, paving, and fencing, are referred to as part of the:
- A. Landscape media
 - B. Elevation materials
 - C. Utility network
 - D. Hardscape
30. 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?
31. The service area of the home landscape might include a:
- A. Patio and hot tub
 - B. Good view of the street and a welcoming walkway to the front door
 - C. Dog yard, cut flower garden, and storage shed
 - D. Swimming pool and children's sandbox
32. If the landscape slopes 18 feet over a horizontal distance of 100 feet, the slope of the site is said to be ____ percent.
- A. 8
 - B. 18
 - C. 82
 - D. 118
33. A pH of 5.0 is 10 times more acidic than pH 6.0, and ____ times more acid than a pH of 7.0.
- A. 5
 - B. 10
 - C. 20
 - D. 100

34. 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

35. Which is the best caption for Figure 5?
- A. Trees should be fertilized to produce heavy summer shade at maturity.
 - B. Trees should not dwarf the home at maturity.
 - C. Trees should frame the home while providing slight overlap of the roof.
 - D. At maturity, trees should never be taller than the eaves of the house.



Figure 5

36. 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
37. A landscape architectural firm was hired to design and oversee a landscape project for a new mall. The firm designed the project and hired other companies to install specific portions of the project including the irrigation system and landscape features. In this case, those who installed these items are best termed:
- A. Landscape managers
 - B. Landscape sub-dividers
 - C. Landscape subcontractors
 - D. Landscape architects
38. A recommended size for home compost piles is generally:
- A. That they be as large as possible.
 - B. That several small piles be used, with each roughly 2 foot square, rather than one larger pile.
 - C. That they be no smaller than 3 feet X 3 feet X 3 feet, and no larger than 5 feet X 5 feet X 5 feet.
 - D. Size is not important for the success of the home compost pile.
39. When fertilizing trees in the landscape, it is generally recommended to:
- A. Spread the fertilizer evenly within the drip line
 - B. Spread half the fertilizer just inside the drip line and half just outside the drip line
 - C. Spread the fertilizer in a circular pattern 2-3 feet outside the drip line
 - D. Apply the fertilizer in four radial lines from the trunk to the drip line, creating a plus sign shape
40. Which of these is the formula for photosynthesis (when in the presence of light energy)?
- A. $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
 - B. $2\text{NH}_4 + 4\text{O}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
 - C. $2\text{NO}_2 + \text{O}_2 \rightarrow 6\text{H}_2\text{O} + 6\text{H}_2\text{O}$
 - D. $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{H}_2\text{O} + 6\text{H}_2\text{O}$

41. The color of hydrangea blooms (*Hydrangea macrophylla*) is closely related to:
- Soil pH
 - The amount of water applied
 - The type pruning technique used
 - The type and amount of mulch applied
42. Which of the following is an example of an unethical business practice?
- A nurseryman advertises on the hometown website that her prices and service are better than other area nurserymen.
 - A nurseryman finds a mutation of a common plant and secretly propagates and grows it in a secluded area of their nursery.
 - A landscaper, installing sod for a client, tells them that armyworms have been found in the area and that they should watch for any infestation. Also, to call their company for control recommendations.
 - A turf maintenance company owner convinces the other turf maintenance companies in their town to charge a standard price that is agreed upon by the company owners and guarantees them a good profit.
43. The best definition of hydroseeding is:
- Applying seed in a liquid mix of seed, fertilizer, cellulose fiber, and an adhesive substance by spraying it onto the soil.
 - Applying seed in a watery mixture through a high pressure spray system with enough force to inject seed into the soil at least one inch for quick and easy germination.
 - Applying partially germinated seed through a high pressure system, providing for quick germination.
 - Providing a hydrophatic treatment to seed that forces water and fertilizer into the seed for quick germination and establishment in the landscape.
44. A dense mesh fabric used for erosion control that allows water through while holding back sediment in the runoff water (Figure 6) is known in the landscape trade as:
- Erosion fabric
 - Black fence
 - Ground cover
 - Silt fence
45. There are several reasons for staking and guying newly planted trees in the landscape. Which of these is **NOT** a reason for staking and guying trees?
- To promote growth in tree trunk circumference.
 - To anchor the tree in the desired location.
 - To protect the tree from strong winds.
 - To provide general support until roots are well established.
46. At maturity, a large deciduous tree planted on the north side of a south facing home in the continental United States will:
- Provide summer afternoon shade
 - Protect the home from winter winds blowing from the north
 - Provide little or no shade for the home in summer
 - Provide cooling shade for the home during hot summer mornings



Figure 6

47. A growing structure that is similar to a greenhouse but has no heat or ventilation and is generally used only for winter plant protection is called a:
- A. Cold space
 - B. Cold frame
 - C. Pot frame
 - D. Warm shed
48. How many trees can be grown on one acre if they are planted in rows that are 6 feet apart with trees in the rows spaced 4 feet apart?
- A. 1,060
 - B. 1,304
 - C. 1,815
 - D. 3,137
49. Which of the following soil ingredients should **NOT** be used in a potting mix for nursery stock?
- A. Moist peat moss
 - B. Fresh sawdust
 - C. Pine bark over two years old
 - D. Vermiculite
50. Which of the following groups of plants are most often propagated by seed?
- A. Deciduous shrubs
 - B. Large evergreen shrubs
 - C. Small evergreen shrubs
 - D. Trees

End
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