

**NATIONAL FFA NURSERY/LANDSCAPE
CAREER DEVELOPMENT EVENT
GENERAL KNOWLEDGE EXAM
2017**

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. A disease caused by a bacterial infection in trees, commonly causing death to the tips of tree branches and leaves is _____. It is very common in ornamental pears as well as pears grown for fruit, in quince, and sometimes crabapple and pyracantha.
 - * A. Fireblight
 - B. Cedar-Apple Rust
 - C. Botrytis
 - D. Canker

2. All the needles on a white pine in Roberta's landscape turned completely brown this October.
 - A. This is a natural cycle of White Pine.
 - B. This is due to a lack of water. She should water heavily now and fertilize in the spring.
 - * C. She should remove the plant. It is almost certainly dead.
 - D. She should prune away the dead limbs and needles so that new growth may emerge.

3. Flowering plants need to be pollinated to reproduce from seeds, either by self-pollination or between plants of the same species for cross-pollination. There are two main methods of moving pollen from the male to the female flower parts for pollination. These are _____ and _____, and in some instances by water and animals.
 - A. heat and wind
 - B. rain and bees
 - * C. insects and wind
 - D. rain and wind

4. In an end of the year business analysis, which of these indicates the most significant loss for a business?
 - * A. Loss of equity
 - B. Reduced inventory
 - C. Reduced liability
 - D. Increased labor cost

5. Which of these plants is generally least tolerant of severe pruning?
 - * A. Pines
 - B. Forsythia
 - C. Chinese holly
 - D. Japanese holly

6. A loam is best described as a soil that has:
 - A. a ratio of 3:1 sand to organic matter.
 - B. less than 25% organic matter.
 - C. a wide range of both organic and mineral matter.
 - * D. approximately equal amounts of clay, silt, and sand.

7. A producer found a limb on one of the shrubs she was growing to be strikingly different in its shape and color. It was attractive and looked like no other shrub on the market. She recognized the opportunity to asexually propagate this plant from cuttings off the limb and to introduce an exciting new plant to the market. The limb she found is best described as a _____.
- A. clone
 - * B. mutation
 - C. change replica
 - D. change agent
8. Which of these is true about the insect pictured in Figure 1?
- A. This is an adult army beetle, which is highly destructive in the landscape.
 - B. In the larval stage, this pest is especially damaging to landscape plants.
 - C. This is a harmless visitor to gardens; a larva of monarch butterflies.
 - * D. This is a highly valuable garden insect; a larva of the lady beetle.
9. Which of the following is most important for a landscape designer or landscaper to know when designing a residential landscape?
- * A. If the home has a septic tank and its location
 - B. The location of the nearest fire department
 - C. Police surveillance availability and frequency of patrols
 - D. The day of household garbage pickup
10. Which of these tells the most about a plant's ability to survive summer heat in a given area?
- A. Gardener's Heat Tolerance Scale
 - B. Heat-Hardiness Scale
 - * C. AHS Plant Heat Zones
 - D. USDA Hardiness Zone
11. Why should a landscaper call 811?
- * A. To prevent damage to gas, electric, communications, water, and sewer lines
 - B. To report an injury at the workplace
 - C. To check the toxicity of a specific chemical
 - D. All the above
12. Suppose the weather is unseasonably cold; about 30 degrees Fahrenheit with light snow. Which of the following plants in the landscape would you expect to receive the least cold damage?
- A. Wax begonia
 - * B. Pansies
 - C. Marigold
 - D. Pothos
13. A homeowner has a bare spot in their lawn that is shaded for extended periods during the day. Which of the following suggestions is the best choice to plant in that area?
- A. Annual bluegrass
 - B. Annual ryegrass
 - * C. A groundcover such as lilyturf
 - D. A grass that is shade-tolerant such as bermudagrass



Figure 1

14. Suppose you are a salesperson in a garden center when a customer presents a long, confusing scenario about a landscape problem and requests your assistance. A good sales technique you should use is:
- A. Without verbal response, go immediately and select the product that you think will solve the problem.
 - * B. Restate in your own words what you heard and ask them to confirm that you've understood them correctly.
 - C. Call the manager over to help you interpret the problem.
 - D. Ask the customer to go to the garden center library to more accurately define the problem.
15. While helping prepare his nursery and landscape team, the teacher devised a game about landscape plants called, "Three Truths and a Lie". Which of the following was the lie?
- A. Some plants can develop viable seeds without sex in a process called apomixis.
 - B. Some holly plants are males and some are females, but only female plants have berries.
 - C. *Ginkgo biloba* is one of the oldest living tree species. It dates to about 250 million years!
 - * D. Climbing roses are one of a few plants that grow and bloom well in sun or shade.
16. When pollen from the flower of one plant is transferred to the stigma of a flower on another plant, _____ has occurred.
- A. Cross-respiration
 - * B. Cross-pollination
 - C. Embryonic transfer
 - D. Fertilization
17. Division is a commonly used method of propagation for some plants. Which of these plants would be **most difficult** to propagate by division?
- * A. Snapdragon
 - B. Hosta
 - C. Lilyturf
 - D. Daylily
18. Which of these is usually the factor contributing most to problems with pesticide drift?
- A. Air temperature
 - B. Rainfall
 - * C. Wind
 - D. Soil temperature
19. When producing plants from seed, which of these is usually the most important for seed germination?
- * A. Temperature of the soil
 - B. pH of the irrigation water
 - C. Fertilizer type applied
 - D. Fertility of the germination mix
20. What can be said about the differences in climates between the USDA Plant Hardiness Zones 5 and 6?
- * A. The average annual minimum winter temperature in Zone 6 is about 10 degrees F higher than in Zone 5.
 - B. Plants that survive, but are marginal in Zone 5, would be less likely to survive in Zone 6.
 - C. The average annual minimum summer temperature in Zone 5 is about 10 degrees F higher than in Zone 6.
 - D. All the above.
21. Which of these is NOT a step recommended in pruning trees?
- A. Remove dead limbs
 - B. Remove crossing branches
 - * C. Cut limb collars flush with the trunk
 - D. Remove suckers

22. To help decrease the chance of disease development in nursery crops, overhead irrigation should be done _____ when practical.
- A. late in the day, just before sundown
 - B. at night, 9 pm to 3 am
 - * C. in the morning
 - D. during mid-day
23. Generally, meat scraps, bones, grease, and dairy products should not be added to a compost pile because these materials:
- A. Acidify the soil.
 - B. Increase the alkalinity to an undesirable level.
 - C. Increase the number of earth worms.
 - * D. Attract rats and mice.
24. Which of these would be easiest to propagate by simple or serpentine layering?
- A. White Fir
 - * B. Forsythia
 - C. White Pine
 - D. *Nyssa sylvatica*
25. It is well known in horticulture that diverse types of soils hold various amounts of water, with sandy soils holding the least and clay soils holding the most water. Which factor explains why clay soils hold more water than sandy soils, disregarding organic matter?
- A. The alkalinity of clay soils accounts for most of its high water holding capacity.
 - B. The acidic nature of clay soils accounts for its high water holding capacity.
 - C. The surface area of sandy soils is much higher than the same volume of clay soils.
 - * D. The surface area of clay soils is greater than the same volume of sandy soils.
26. Waylon had \$4.32 per pot invested in his crop of 1500 junipers. A landscape company offered him \$6.50 per pot, but he rejected their offer and soon sold the entire crop at his asking price of \$7.25 per pot. What was his net profit on the crop?
- A. \$10,875
 - B. \$9,750
 - * C. \$4,395
 - D. \$1,125
27. Heather needs to remove a piece of wire that has wrapped around her rotary mower blade. One thing that she should do as a safety measure is:
- A. tilt the mower back at 30 to 50 degrees.
 - * B. remove the spark plug wire.
 - C. readjust the cutting height.
 - D. remove the air filter.
28. A good rule of thumb for mowing grass is to:
- A. secure the emergency cut-off bar with wire on string.
 - * B. remove no more than 1/3 of the leaf blade at any one time.
 - C. cut around trees in the lawn area in a clockwise manner when practical.
 - D. use a vertical mower on slopes over 15 percent.
29. Which of these is an LD-50 rating that would be most toxic to humans?
- A. 43
 - * B. 19
 - C. W-93
 - D. 3000

30. The principles of xeriscaping would be best exemplified by a homeowner who:
- A. installs a sprinkler system that operates on a timer.
 - * B. replaces non-native ornamentals with native plants that do not require irrigation.
 - C. lowers the lawn mower blade to reduce the height of the turf.
 - D. adjusts the pH of the soil to a desirable level for the turf being grown.
31. A gasoline and oil mix at a ratio in the range of 20:1 to 50:1 is most likely intended for a:
- * A. Two-cycle engine
 - B. Three-cycle engine
 - C. Four-cycle engine
 - D. Eight-cylinder tractor
32. Which of these helps keep a retaining wall from collapsing from the force of the soil behind the wall?
- * A. Deadmen
 - B. Wall bolts
 - C. Lag screws and wall bolts
 - D. The gravel bed the wall is set upon
33. A homeowner wanted Bermudagrass established in her yard but was concerned about the cost. The landscaper suggested a process where pieces of Bermuda sod are chopped into sections of stems containing one or more nodes. These pieces are distributed over the site and covered lightly by disking and rolling. What method of turf establishment does this describe?
- A. Sodding
 - * B. Stolonizing
 - C. Cultipacking
 - D. Rasterizing
34. The purpose of the edging trench cut between the Bermudagrass and pine straw mulch in Figure 3, is to help:
- * A. prevent stolons and rhizomes from invading the mulch bed.
 - B. direct water onto the sidewalk for adequate drainage.
 - C. direct water into the mulch bed for irrigation purposes.
 - D. anchor the pine straw during heavy rains and wind.
35. Which of these is **NOT** a benefit of a mulched area around established landscape trees?
- A. Mulch around trees protects the base of the tree from mowers.
 - B. Mulch provides a neat appearance when properly maintained.
 - * C. Mulch around trees provides a barrier to insects and disease.
 - D. Mulch around trees increases the overall speed of mowing.
36. One of the major problems in maintaining interior plantscapes is:
- A. the increased nutrient requirement of indoor plants.
 - * B. the substantial reduction in the quality and intensity of light.
 - C. the quality and quantity of the irrigation water required.
 - D. the lack of natural breezes bringing warmth to the plant.



Figure 3

37. The measure of the soil's ability to hold positively charged ions is a very important soil property that influences the soil structure, nutrient availability, soil pH, and the soil's reaction to fertilizer applications. This is referred to as:
- * A. Cation exchange capacity
 - B. pH upgrade capacity
 - C. Soil amelioration
 - D. Ion degeneration and supplementation

38. What is wrong with the tree planting diagram shown in Figure 2?
- A. The hole is not deep enough.
 - B. The 3-inch mulch cover is too thick.
 - C. The hole was dug too wide.
 - * D. None of the above.

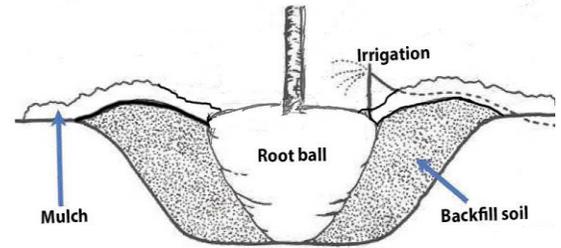


Figure 2

39. Most of the feeding roots of established trees in the landscape are:
- * A. in the top 12 inches of soil.
 - B. between 12 and 30 inches deep.
 - C. between 30 and 50 inches deep.
 - D. over 50 inches deep.

40. Which of the following would make the best general-purpose soil mix for a potted nursery crop?
- A. 30% peat, 70% sand
 - * B. 70% bark, 20% peat moss, 10% sand
 - C. 50% vermiculite, 10% sand, 40% topsoil
 - D. 70% topsoil, 30% sand

41. This type of insurance provides protection to the business if you, your employees, your products, or your services cause bodily injury or property damage to a third party.
- A. Commercial auto insurance
 - * B. Liability insurance
 - C. Workers compensation insurance
 - D. Property insurance

42. This type of insurance provides wage replacement and medical benefits to employees who are injured on the job.
- A. Commercial auto insurance
 - B. Liability insurance
 - * C. Workers compensation insurance
 - D. Property insurance

43. A homeowner will soon establish a new lawn by seeding at his home. However, the slope is about 4% and he is worried about erosion prior to germination of his grass seed. A good practice in this situation might be to plant _____ along with his lawn seed. This plant germinates quickly and will hold the soil in place until the turfgrass seeds germinate and become established.
- A. Bermudagrass
 - B. Bentgrass
 - * C. Annual ryegrass
 - D. Annual bluegrass

44. Which plant would not likely need staking when planted in the landscape?
- A. White pine, 4-5', container grown
 - B. Sweet gum, 8-10', B & B
 - C. Red maple, 8-10', B & B
 - * D. Japanese holly, 2 gallon, container grown

45. How often is agricultural lime applied to the lawn?
- A. Once per year
 - * B. When a soil test indicates it is needed
 - C. Anytime that phosphorus levels are in the high to very high range
 - D. Each time the turf is aerated; generally, every one to two years
46. Battery operated landscape equipment such as string trimmers and hedge trimmers have been much improved in recent years. These powerful and convenient tools are used by both homeowners and professionals. Battery powered tools have become popular because they:
- A. are quiet.
 - B. are lightweight.
 - C. do not emit exhaust fumes.
 - * D. all the above
47. If you find an ootheca (egg mass) of a praying mantis in your landscape, you should:
- A. Spray the plant with an oil-based insecticide.
 - B. Wait until the eggs hatch and then spray with an insecticide.
 - * C. Not disturb the egg mass.
 - D. Prune off the plant parts with the egg mass and burn them.
48. This resource serves as a standard for the measurement of nursery stock. These standards provide buyers and sellers common terminology, and standards in plant size (caliper, height, branching height) in order to facilitate transactions involving nursery crops.
- A. United Standard for Landscape Materials
 - * B. American Standard for Nursery Stock
 - C. United Standard for Landscape Materials
 - D. American United Measurement Standards
49. A rule-of-thumb in landscaping is that the walkway leading to the front door of a residence should generally accommodate two adults walking side by side, which is at a minimum about ____ feet wide.
- A. 2
 - B. 3
 - * C. 4
 - D. 7
50. Katelyn had to sharpen her rotary lawnmower blade, including removing a large nick in one end after hitting a piece of metal in the lawn. Her Ag teacher reminded her to _____ the blade before reinstalling it or the mower would probably vibrate and possibly cause damage to the engine.
- A. lubricate
 - B. temper
 - * C. balance
 - D. differentiate

End
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