

**NATIONAL FFA NURSERY/LANDSCAPE
CAREER DEVELOPMENT EVENT
GENERAL KNOWLEDGE EXAM
2018**

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 is generally the most important condition for ensuring success when propagating shrubs from softwood cuttings?
 - A. Maintaining high humidity around the cuttings
 - B. Keeping the soil saturated and the leaves of the cutting dry
 - C. Maintaining high soil fertility
 - D. Spraying the cuttings periodically with rooting hormone
2. A home builder is preparing a newly constructed house for sale and plans to have an open house in about a week. They want the landscape to look complete and well established with the lawn looking as if it has been growing for months. If cost is not a concern, the landscaper should:
 - A. plant the best seed available and water and fertilize heavily.
 - B. use hydro-seeding with a complete fertilizer and ryegrass as a nurse crop.
 - C. install sod.
 - D. use ryegrass as a nurse crop for a fast start and over-seed with fescue.
3. A tractor driven on public roads should always have:
 - A. a slow-moving-vehicle sign on the back.
 - B. roll bars around the entire driver area.
 - C. an oversized load sign on the back of the tractor.
 - D. a USDA issued tractor license plate on the back.
4. Which of the following is true about sticking softwood cuttings?
 - A. The base of the cutting should touch the bottom of the container.
 - B. The media should be firmed around the base of the cutting.
 - C. The media should be left uncompacted and as loose as possible to maintain the maximum amount of air.
 - D. The media for cutting propagation should be 6 to 12 inches deep in the container.
5. In the landscape plant production business, ____ has almost been abandoned as an ingredient in the growing mix.
 - A. topsoil
 - B. bark
 - C. coir
 - D. perlite
6. From the statements below about a horticulture business, which statement tells us the most about the financial health of this company?
 - A. The company had gross sales of \$800,000 last year.
 - B. The company made a net profit of \$182,000 last year.
 - C. The company expanded into the hard-goods business in January.
 - D. The company expanded into the landscape installation business in February.
7. Which of these groups are all deciduous trees?
 - A. *Cercis canadensis*, *Fagus sylvatica*, *Pinus strobus*
 - B. *Magnolia grandiflora*, *Quercus rubra*, *Abies concolor*
 - C. *Tulipa spp. cv.*, *Acer rubrum*, *Tsuga canadensis*
 - D. *Taxodium distichum*, *Liquidambar styraciflora*, *Acer palmatum*

8. Depending on the climate of the area, most nursery growers in the US must provide some type of winter protection for their potted crops. Which of these is **NOT** a method used for winter protection.
- A. Moving the plants tightly together, commonly known as pot-to-pot
 - B. Putting the plants inside a cold frame
 - C. Growing in the field in a system known as pot-in-pot
 - D. Filling the water space of the pots with insulating fiber
9. This company sells mostly large balled-and-burlapped shrubs and trees. You would expect their harvest and delivery season to be from:
- A. late fall through late spring.
 - B. early summer through fall.
 - C. late summer through late fall.
 - D. spring through late summer.
10. Before digging to install a landscape you should:
- A. call the utility companies that services the area.
 - B. dial 811.
 - C. post "Danger" signs along the perimeter of the work area.
 - D. require the property owner to sign a liability release for the utilities.
11. Which group of plants below is likely to have the least problems with insect and disease infestation and will generally suffer less from drought and environmental conditions?
- A. oriental plants
 - B. open pollinated plants
 - C. hybrid plants
 - D. native plants
12. A customer purchases a Yellow Poplar and a Sweetgum tree to plant in their landscape. They ask how far these trees should be planted from their house. Of the following answers, which is the best rule-of-thumb and advice for this customer?
- A. Plant large trees such as these at least 20 feet from the house.
 - B. Mature height for these trees is about 70 feet, so they should be planted 70 feet from the home.
 - C. These trees can grow to a diameter of 12" in 12 years, so plant them 144 feet from the house ($12 \times 12 = 144$).
 - D. These excellent shade trees should be planted about 10 to 12 feet from the foundation.
13. A customer purchased some shrubs and wants to know how far he should plant them from the foundation of his home. If these shrubs are in 1-gallon pots, and grow to a mature height of 4 feet and 4 feet in diameter, which of the following is the best response?
- A. Plant them 16 feet from the foundation (4 ft. wide X 4 ft. high).
 - B. Plant them 1 foot from the foundation – one foot for each gallon in size.
 - C. Plant them at least 2 feet on-center from the foundation, and 3 feet if space is available.
 - D. As with all foundation shrubs, plant them no closer than 6 feet on-center from the foundation.
14. Growers help maximize profits by maximizing growing space. One grower has a coldframe that is 100 feet long and 20 feet wide. She has filled the house to capacity with only a walkway down the middle not filled with plants. The walk is 4 feet wide running the entire length of the house. What percent of the house is used to produce plants?
- A. 95
 - B. 80
 - C. 75
 - D. 60

15. Most landscape experts do not recommend using lawn aeration equipment that has solid tines or spikes. They recommend aeration equipment that removes soil cores during the aeration process because:
- A. spikes do not allow for fertilizer penetration because the holes are smaller.
 - B. spike aerators leave larger holes that are difficult to fill.
 - C. core aeration leaves holes in the lawn that can be filled with compost.
 - D. spikes may increase soil compaction as the soil is compressed to all sides by the force of the spikes.
16. A homeowner described a problem they are having with their lawn. The grass is gradually thinning, yellowing, and weakening, and there are scattered, irregular dead patches. The turf feels spongy when walked on in the affected areas. When the affected sod is pulled, it easily lifts out of the ground because it has very few roots. What is the most likely culprit?
- A. mealy bugs.
 - B. white flies.
 - C. aphids
 - D. white grubs
17. Plants that suffer from too much sun in the hot afternoons may be planted on the ____ side of the house to provide protection in the afternoon.
- A. west
 - B. south
 - C. north
 - D. south-west
18. This landscape operation is performed to evaluate the general landscape requirements of the property, including the needs of the family, to determine topography and drainage, and to note structures for removal, replacement, or renovation.
- A. site analysis
 - B. plant inventory
 - C. exterior expedition
 - D. visionary planning
19. The golf course superintendent announced at the morning meeting of employees that the mowing heights for the day would be .125 inches, .7 inches, and 2 inches. The crew knew to mow the three main sections of the golf course as follows:
- A. greens at .125 inches, the fairways at .7, and the roughs at 2 inches.
 - B. fairways at .125 inches roughs at 2 inches, and greens at .7 inches.
 - C. greens at .125 feet, roughs at .7 inches and the fairways at 2 inches.
 - D. fairways at 1.25 inches, greens at .7, and roughs at 2 inches.
20. Pines are often identified by their needle length and the number of needles per bundle (fascicle). The white pine has ____ needles to the bundle, making it easy to identify.
- A. 2
 - B. 3
 - C. 4
 - D. 5
21. Which of the following propagation methods is likely to produce the greatest variability in the genetic makeup of the new plants?
- A. Plants grown from seed.
 - B. Plants propagated from stem tip cuttings.
 - C. Plants grown from tissue culture.
 - D. Plants propagation by division.

22. Growers are careful to give potted crops plenty of space to grow. Most plants are spaced in the growing area so that the leaves of one plant do not touch leaves of neighboring plants. The main reason this is done is to prevent:
- A. the movement of insects from plant to plant.
 - B. the spread of disease.
 - C. tall, leggy growth of the plants.
 - D. deterioration of the containers from damp and moist conditions.
23. A ____ mower will generally give the cleanest and smoothest cut to a turf area.
- A. rotary
 - B. flail
 - C. reel
 - D. vertical
24. A customer tells the sales person that they want some foundation plants for an area in front of their home. Which of these is the most appropriate response of the salesperson to this request?
- A. You should plant azaleas. Let me show you the great new varieties we have.
 - B. How much sun does the area get per day, and is it afternoon or morning sun?
 - C. Do you have a water hose that will reach that area. If not, what length do you need?
 - D. Let me help you with some lime first. I am sure your soil will need it.
25. Which of the following has the greatest effect on iron availability in the soil?
- A. pH
 - B. soil temperature
 - C. phosphorus
 - D. soil texture
26. In the name *Acer Rubrum* cv. October Glory, 'October Glory' is a ____ name.
- A. family
 - B. cultivar
 - C. species
 - D. cultivated variant
27. Which of these flower parts is male?
- A. anther
 - B. style
 - C. stigma
 - D. pistil
28. Many plants root easily while others are difficult to root and benefit from the addition of a rooting hormone. One of the first root-promoting hormones discovered is a natural plant substance known as ____.
- A. B-Nine
 - B. root growth powder
 - C. indoleacetic acid
 - D. bio-stimulant acid
29. What effect, if any, does the terminal bud have on lateral buds of plants?
- A. Terminal buds impede development of lateral buds by shading them.
 - B. Hormones from the terminal bud suppresses growth of the lateral buds.
 - C. Hormones from the terminal bud promotes growth of the lateral buds.
 - D. Terminal buds have no effect on lateral buds.

30. Whiteflies are major pests of ornamental plants as well as agronomic crops. They have ____ mouth parts.
- A. piercing-sucking
 - B. chewing
 - C. rasping
 - D. scratching-sapping
31. Oaks are commonly propagated commercially by ____.
- A. seeds
 - B. cuttings
 - C. grafting
 - D. tissue culture
32. The blooming period of many annual flowers can be extended by:
- A. providing bees for pollination.
 - B. providing butterflies.
 - C. providing night lights.
 - D. deadheading.
33. Which of the following has outstanding bark for visual effect in the winter landscape?
- A. Chinese elm
 - B. oaks
 - C. red maple
 - D. mugo pine
34. Only male cultivars of this tree should be propagated and sold for planting in the landscape. The female of this species produces foul smelling fruit.
- A. pin oak
 - B. ginkgo
 - C. flowering crabapple
 - D. flowering dogwood
35. Which of the following trees produces spiky balls bearing seed in the fall, creating a nuisance as they fall onto managed landscape areas?
- A. Drake elm
 - B. American sweetgum
 - C. eastern redbud
 - D. flowering dogwood
36. The _____ determines the flower color of *Hydrangea macrophylla* (Bigleaf Hydrangea).
- A. amount of sunlight
 - B. pH level of the soil
 - C. level of nitrogen in the soil
 - D. level of moisture and nutritional content of the soil
37. One symptom of iron deficiency in plants is:
- A. interveinal necrosis of older leaves.
 - B. elongation of the internodes.
 - C. general chlorosis of young leaves.
 - D. interveinal chlorosis of young leaves.

38. Entire leaf margins are best described as _____ while serrated leaf margins are _____.
A. long; lobed
B. spine-like; rough
C. smooth; saw-toothed
D. wavy; lobed
39. Bagworms often infest which of the following plants?
A. hollies
B. bluegrass
C. junipers
D. maples
40. A landscaper has a client who wants unusual plants installed in her landscape. She found photos of plants she likes on the internet and sent them to the landscaper. The landscaper should consult the USDA Plant Hardiness Zone Map and the _____ to determine the likelihood of the plants surviving in the client's landscape.
A. National Oceanic and Atmospheric Administration (NOAA) national weather map
B. National Weather Service Rainfall Map
C. Extension Service Weather Map
D. American Horticultural Society Heat Tolerance Zone Map
41. This shrub grows 8 to 15 feet or higher and is often trained against a wall as an espaliered specimen. In the fall, it produces colorful orange to red pea-sized fruit.
A. Chinese juniper
B. Japanese holly
C. Firethorn
D. American arborvitae
42. A plant that has two leaves emerge from one node on a stem, one leaf directly across from the other, is said to have _____ leaf arrangement.
A. opposite
B. alternate
C. pinnate
D. whorled
43. Generally, although laws vary widely, most items purchased for resale by retail garden centers and raw materials used to grow plants in commercial nurseries are exempt from _____ tax, although the ultimate consumer is usually required to pay this tax.
A. sales
B. income
C. wholesale
D. liability
44. Which of the following is **NOT** true about root hairs?
A. Root hairs are often called feeder roots.
B. Root hairs provide the primary root surfaces that absorb water and nutrients from the soil.
C. When transplanting, it is important to protect and prevent drying of the root hairs.
D. Mycorrhizae often attack root hairs and cause great harm to the root system.
45. A good soil mix, under ideal conditions, contains roughly 50% solid matter, ____% air, and ____% water.
A. 25; 25
B. 10; 40
C. 5; 45
D. 15; 35

46. Which of these is **NOT** an item used to aid in soil erosion control?
- A. silt fence
 - B. retention pond
 - C. vegetative cover
 - D. hozon siphon
47. A common type of landscape plan drawing prepared by designers is the _____ view. In this type of drawing, the viewer observes the site in 3-D as though they are looking at the site live.
- A. plan
 - B. vertical
 - C. perspective
 - D. axonometric
48. Naturalized plants are plants that:
- A. entered the country as exotics.
 - B. are not native to the US.
 - C. have escaped cultivation and become established among native US plants.
 - D. all of these describe naturalized plants.
49. A rain garden is best defined as:
- A. a grouping of landscape plants that survive and thrive on natural rainfall without irrigation.
 - B. a garden area designed to capture and infiltrate rainwater into the landscape.
 - C. a water basin designed to direct rainwater to the sewer system.
 - D. an area designed to direct excess rain water away from the house.
50. If you plant large trees that reach 90 feet tall at maturity next to a small one-story home, the principle of _____ has not been followed.
- A. simplicity
 - B. scale
 - C. balance
 - D. emphasis

End
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