



Nursery/Landscape Career Development Event

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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.

GENERAL KNOWLEDGE EXAM

1. Which of these is NOT a benefit of using mulch around landscape plants?
 - A. add nutrients to the soil
 - B. help control weeds
 - C. help prevent bark damage when string trimming
 - D. conserve soil moisture

2. Propagating plants using seeds that have a hard seed coat often involves scratching the seed coat in a process known as:
 - A. Grafting
 - B. Stratification
 - C. Gradation
 - D. Scarification

3. Correcting low soil pH can be achieved by applying:
 - A. Lime
 - B. Potassium
 - C. Phosphorus
 - D. Nitrogen

4. Fertilizer is often applied through the irrigation system. This is often referred to as:
 - A. Fertigation
 - B. Chemigation
 - C. Post-fertilization
 - D. Fertilizer enhancement

5. While the desirable soil pH for plants varies by species, a general range for most landscape plants is:
- A. 1.0 to 7.0
 - B. 5.0 to 10
 - C. 5.5 to 6.5
 - D. 1.0 to 14
6. Which of the following is a naturally occurring plant hormone which causes the elongation of cells in shoots and is often used as a root-promoting substance on cuttings used for propagation?
- A. Ethylene
 - B. Auxin
 - C. Citric acid
 - D. Portulaca
7. The amount of a pesticide required to kill half of a population is referred to as:
- A. LD50
 - B. The re-entry level of a pesticide
 - C. The half-life of the pesticide
 - D. The 50-50 rating
8. A tree planted in the landscape that will grow up to 70 feet tall at maturity should be planted no closer than _____ feet from the house.
- A. 5 to 10
 - B. 10 to 15
 - C. 20 to 25
 - D. 80 to 90
9. Iron chlorosis may be effectively treated with a product called _____ iron.
- A. Chlorotic
 - B. Anti-deficiency
 - C. Chelated
 - D. Formosan

10. This is a common disease caused by fungi and found throughout the United States. It is easily recognized by a white to gray powdery growth, usually on the upper leaf surface.
- A. Mealy fungi syndrome
 - B. Powdery mildew
 - C. Cedar-apple rust
 - D. Powdery scale
11. One key to developing an effective integrated pest management program (IPM) is:
- A. the systematic use of insecticides and herbicides
 - B. to use biological controls on a weekly basis
 - C. the systematic use of slow-release fertilizers
 - D. to closely monitor pest populations
12. The flower color of some hydrangeas can be changed by:
- A. Increasing the fertilization rate
 - B. Changing the pH of the soil
 - C. Decreasing the fertilization rate
 - D. Adjusting the amount of sunlight the plant receives
13. During pollination, pollen grains are moved from the _____ of a flower to the _____.
- A. Stigma: Filament
 - B. Anther: Stigma
 - C. Style: Filament
 - D. Sepal: Anther
14. Stem tissues that conduct water and dissolved minerals from the roots to the rest of the plant is _____.
- A. Xylem
 - B. Phloem
 - C. Stigma
 - D. Style

15. Suppose a home landscape is balanced, but the plants to the right and left side of the front door are not the same. They vary in number, species, size, and shape. This landscape is said to be _____ balanced.
- A. Symmetrically
 - B. A-symmetrically
 - C. Formally
 - D. Compositely
16. A 10-20-15 fertilizer analysis indicates that it contains:
- A. 10% Potassium, 20% Nitrogen, 15% Inert Nutrients
 - B. 10% Nitrogen, 20% Potassium, 15% Micro-Nutrients
 - C. 10% Potassium, 20% Nitrogen, 15% phosphorus
 - D. 10% Nitrogen, 20% Phosphorus, 15% Potassium
17. In landscape design, _____ lines are often used to add a feeling of peace, calm, and restfulness.
- A. Vertical
 - B. Horizontal
 - C. Curved
 - D. Diagonal
18. Which of these terms/phrases is NOT used in landscape design?
- A. Symmetry
 - B. Visual weight
 - C. Texture
 - D. Virtual placement
19. Traditional plant retail nurseries often compete with so-called big box store nursery and garden centers by providing better:
- A. Prices
 - B. Shopping conditions
 - C. Equipment
 - D. Service

20. Which of the following methods of propagation is most likely to result in genetic variation in the offspring?
- A. air layering
 - B. T-budding
 - C. cleft grafting
 - D. reproduction by seeds
21. A homeowner was ordering topsoil for his garden. He determined he needed 54 cubic feet. To place the order through the companies' website he was required to enter his order in cubic yards. How many cubic yards does he need?
- A. 2
 - B. 4
 - C. 6
 - D. 18
22. A nurseryman uses a device that mixes a concentrated fertilizer solution into the water line during irrigation. This device is a type of:
- A. Concentration meter
 - B. Proportioner
 - C. Odometer
 - D. Fertilizer pump
23. Sallie is preparing an application to use when she is screening and hiring new employees. Which information below can she NOT request on the application or in the interview?
- A. Education level
 - B. Religious affiliation
 - C. Telephone number
 - D. Previous employers

24. One guideline for good customer service in a retail nursery is to:
- A. Put the customer's bill used for payment into the register before counting any change back to them
 - B. Dress very casually to project the persona of a working person
 - C. Acknowledge the customer as they enter the business after finishing with the task you are involved with
 - D. Acknowledge the customer as they enter the business, even if you are busy with another customer
25. Which of these soils will dry quickest after irrigation or a rain?
- A. Clay
 - B. Loam
 - C. Sandy loam
 - D. Clay loam
26. *Bacillus thuringiensis* is:
- A. A microbe found naturally in soil and used to control insect larvae
 - B. The genus and species name for black walnut
 - C. A difficult to control disease of trees, often called fire-blight
 - D. A recently introduced variety of Mentor Barberry
27. Soil pH is measured on a scale that ranges from:
- A. 5 to 8
 - B. 2 to 20
 - C. 0 to 20
 - D. 1 to 14
28. The main advantage of producing plants from cuttings is that:
- A. The genetics of the parent plant are passed to the new plant without variation
 - B. Seedling variation often results in new varieties from cutting
 - C. Propagation from cuttings is always easier than seed production
 - D. Plants propagated from cuttings are more disease resistant

29. After cuttings are rooted and repotted, they may be hardened-off by:
- A. increasing heat and reducing water
 - B. increasing frequency of watering and applying heavy fertilization
 - C. reducing irrigation and moving them to an area with cooler temperatures
 - D. placing them in heavy shade for several weeks
30. Which of these plants is most tolerant of partial shade?
- A. Dogwood
 - B. Juniper
 - C. Japanese Black Pine
 - D. Scotch Pine
31. The USDA plant hardiness zone map may be used to:
- A. Determine if a plant can withstand the lowest temperatures of the area
 - B. Categorize plants into genus and species
 - C. Determine if a plant can withstand the highest temperatures of the area.
 - D. Determine if a plant is adaptable to rainfall in the area
32. A good soil is often described in terms of the percentage of air, water, and mineral and organic matter (solid matter). Which ratio below is most desirable?
- A. 40% air, 25% water, 35% solid matter
 - B. 50% air, 5% water, 45% solid matter
 - C. 25% air, 25% water, 50% solid matter
 - D. 10% air, 10% water, 80% solid matter
33. Why is a landscape fabric more desirable to use around landscape plants and under mulch than black polyethylene film? Landscape fabric:
- A. Prevents moisture from penetrating too deeply and holds it in the root zone
 - B. Makes a better base for all mulch types and hold the materials in place
 - C. Completely controls weeds, but polyethylene may let weeds pass through
 - D. Allows the exchange of gases between soil and air and the infiltration of water

34. If you use a motorized tiller in garden soil while the soil is still wet after a rain, the:
- A. Tines on the tiller could be damaged
 - B. Structure of the soil may be damaged
 - C. The nutrients may be drained out of the root zone
 - D. Dormant weed seed may be brought to the surface and germinate
35. A precursor to root formation on hardwood cuttings of some plants is a growing mass of unorganized plant cells called ____.
- A. Callus
 - B. Adventitious knots
 - C. Nodules
 - D. Lenticels
36. If an Extension Agent is unable to identify a plant disease problem, they might consult the state plant _____ to assist in disease identification and control.
- A. Pathologist
 - B. Morphologist
 - C. Ornithologist
 - D. Ichthyologist
37. In which month listed are hardwood cuttings generally taken?
- A. April
 - B. May
 - C. June
 - D. October

38. Suppose you receive several thousand bareroot hardwood trees at your nursery during the winter. These dormant trees are to be potted in three-gallon pots. However, they arrive at a busy time and it may be a couple of weeks before you have time to pot them. Which of these would be the best plan to preserve the trees?
- A. Heal them in
 - B. Store the unopened boxes of trees in the greenhouse at 70 degrees
 - C. Store the trees in buckets of water in a warm greenhouse
 - D. Open the boxes and store the trees in a warm building with the roots covered with damp straw
39. Although methods and techniques of nursery plant propagation from cuttings vary by plant species and grower preferences, which of these is NOT a correct procedure?
- A. Cutting length may vary as desired and based on plant type. However, make all cuttings the same length.
 - B. If wounding of the cuttings is desired, cut the base of each cutting using a knife, the blade of a pruner, etc.
 - C. If a hormone treatment is to be used, liquid or powder formulations may be used.
 - D. Take the cutting above a node ensuring nodes are not covered in the rooting medium.
40. Why are newly stuck cuttings sometimes covered with a sheet of polyethylene? To:
- A. help keep humidity high around the cuttings
 - B. reduce the light intensity
 - C. prevent disease
 - D. prevent insects and disease
41. Which of these conditions is most likely to encourage nursery cuttings to root faster?
- A. Leaving as many leaves as possible on the cutting
 - B. Leaving flowers and flower buds on the cutting
 - C. Providing gentle bottom heat

- D. Keeping the soil cool and the temperature of the air around the cutting high
42. While producing nursery crops in containers has many advantages, one disadvantage is that:
- A. the root system may be poorly shaped and become pot-bound
 - B. containerized plants are heavier than balled and burlapped plants
 - C. the plants are harder to keep pruned
 - D. the survival rate is lower than bareroot plants when planted in the landscape
43. Which of these plants is most likely to be propagated by division of the crowns?
- A. Liriope
 - B. Red maple
 - C. Bluegrass
 - D. Pines
44. In the botanical name *Syringa vulgaris*, *vulgaris* is the _____ name.
- A. family
 - B. species
 - C. cultivar
 - D. genus
45. The measure of a soil's ability to hold positively charged ions is an important soil property. It affects soil structure, nutrient availability, soil pH, and the soil's reaction to fertilizer applications and other soil improvements. This is referred to as:
- A. the cation exchange capacity.
 - B. the pH upgrade capacity.
 - C. soil amelioration.
 - D. ion expectoration.
46. Three layers or horizons of a normal soil profile are:
- A. sand, silt, and clay.
 - B. topsoil, bedrock, and foundation material.

- C. topsoil, subsoil, and parent material.
 - D. loam, clay, and parent material.
47. Asymmetrical balance is sometimes referred to as _____ balance.
- A. formal
 - B. informal
 - C. prescribed
 - D. conventional
48. One purpose of a berm in the landscape is to:
- A. level a landscape prior to planting.
 - B. discourage or redirect rainwater runoff and increase infiltration.
 - C. provide fish to control weeds in the rain garden and to provide recreation for the owner.
 - D. increase the speed of runoff from rainwater.
49. General maintenance of annuals in landscape color beds includes fertilization, weeding, irrigation, and:
- A. over-seeding
 - B. cultivation each week
 - C. dead-heading
 - D. root pruning
50. Which of the following is NOT used in either the monitoring or control of insect pests?
- A. Integrated Pest Management
 - B. Sticky cards
 - C. Sex attractant pheromones
 - D. Surfactants

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