

Landscape Horticulturist



1. Which of the following statements accurately describes gymnosperms and identifies their largest subgroup?
 - ☐ (A) Gymnosperms are non-vascular plants, with ferns being the largest group.
 - ☒ (B) Gymnosperms are vascular plants that reproduce via cones, with conifers being the largest group.
 - ☐ (C) Gymnosperms are flowering plants, and their largest group is the angiosperms.
 - ☐ (D) Gymnosperms are aquatic plants, and the largest group consists of mosses.
2. Explain why an impact-drive rotary sprinkler head is more effective at throwing water over a larger area compared to a fixed spray sprinkler.
 - ☐ (A) It uses less water overall
 - ☐ (B) It is easier to install
 - ☐ (C) It requires less maintenance
 - ☒ (D) It rotates and covers more ground
3. Explain the difference between fertigation and chemigation in agricultural practices.
 - ☐ (A) Fertigation is only for organic fertilizers, while chemigation is for synthetic fertilizers.
 - ☒ (B) Fertigation involves applying fertilizers through irrigation, while chemigation refers to applying chemicals, including pesticides, through irrigation systems.
 - ☐ (C) Fertigation is used for watering plants, while chemigation is used for harvesting.
 - ☐ (D) Fertigation is a method of soil testing, while chemigation is a planting technique.
4. What is the primary method of nutrient solution management in a closed hydroponic system?
 - ☐ (A) It is disposed of after each use.
 - ☐ (B) It is replaced weekly.
 - ☐ (C) It is diluted with water.
 - ☒ (D) It is recirculated.

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5. Which of the following correctly represents the overall chemical reaction for aerobic respiration in plants?
- ☒ (A) $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O +$ energy ☐ (B) $C_6H_{12}O_6 + O_2 \rightarrow 6H_2O + 6CO_2 + 12$ energy
- ☐ (C) $6C_6H_{12}O_6 + O_2 \rightarrow 12H_2O + 6CO_2 +$ energy ☐ (D) $C_6H_{12}O_6 + 6CO_2 \rightarrow 6O_2 + 6H_2O +$ energy
6. A mutation on the shoot of a plant, resulting in a different growth habit than the rest of the plant, is known as a
- ☐ (A) Differentiation ☒ (B) Bud sport.
- ☐ (C) Interphase ☐ (D) Polar shift.
7. What is the primary reason for brown patches in grass surrounding a single sprinkler head?
- ☒ (A) A faulty sprinkler head ☐ (B) Poor soil drainage
- ☐ (C) Insufficient water pressure ☐ (D) Inadequate sunlight
8. The _____ test is performed by drying a 6-inch diameter and 1-inch thick sample of soil to see if cracks develop.
- ☒ (A) Drying ☐ (B) Thumb penetration
- ☐ (C) Plasticity ☐ (D) Ribbon
9. What are circadian rhythms primarily characterized by?
- ☐ (A) Variations in soil moisture levels ☒ (B) Endogenous processes occurring over a 24-hour period
- ☐ (C) Seasonal changes in plant growth ☐ (D) Responses to environmental stimuli
10. What are adventitious roots?
- ☒ (A) Roots that form from basal stem tissue when the plant is tipped over. ☐ (B) The same as lateral or branch roots
- ☐ (C) Roots that form bark on their surface ☐ (D) Roots with large number of root hairs

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11. Explain why scheduling grading during dry periods is considered a best practice for erosion control.
- ☐ (A) Grading during dry periods allows for better compaction of the soil.
 - ☐ (B) Grading equipment operates more efficiently on dry soil.
 - ☒ (C) Dry soils are less susceptible to erosion from water runoff compared to saturated soils.
 - ☐ (D) Dry periods promote faster vegetation growth, which stabilizes the soil.
12. What is a common cause of scalping in turf?
- ☐ (A) pushing the mower too slowly
 - ☒ (B) setting the cutting height too low
 - ☐ (C) inconsistency of fertilizer application
 - ☐ (D) uneven coverage of irrigation water
13. The choice of material and finish must meet the requirements of:
- ☐ (A) Safety
 - ☐ (B) Durability
 - ☐ (C) Sustainability
 - ☒ (D) All the above
14. 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) Allow exchange of gases between soil and air
 - ☐ (C) completely control weeds
 - ☐ (D) make a better base for rock mulch
15. Which of these choices best describes apical dominance?
- ☐ (A) Auxin is produced in apical buds and stimulates the growth of lateral buds.
 - ☐ (B) Lateral buds produce hormones that inhibit the growth of apical buds.
 - ☐ (C) Lateral buds produce hormones that stimulate the growth of apical buds.
 - ☒ (D) Auxin is produced in apical buds and inhibits the growth of lateral buds.
16. Prior to introducing plants into an interiorscape with less optimal growing conditions, it is essential that the plants undergo a process to help them adjust to their new surroundings. This process is known as _____.
- ☐ (A) fertilized
 - ☐ (B) pruned
 - ☐ (C) hardened off
 - ☒ (D) acclimatized

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17. Carbohydrates are defined as:
- ☐ (A) A group of organic compounds containing carbon, nitrogen, and oxygen
 - ☐ (B) A group of organic compounds containing lithium hydrogen and oxygen
 - ☐ (C) A group of inorganic compounds containing hydrogen, and oxygen
 - ☒ (D) A group of organic compounds containing carbon, hydrogen, and oxygen
18. If a landscape designer wants to enhance a garden path using gravel, what additional feature could they incorporate to improve aesthetics and functionality?
- ☒ (A) Edging with stones or bricks
 - ☐ (B) Creating a path without any compacting
 - ☐ (C) Adding only decorative plants along the path
 - ☐ (D) Using only gravel without any borders
19. Explain the purpose of pruning techniques in horticulture and how they can affect a tree crop's fruit production.
- ☐ (A) To increase the size of the tree without affecting fruit yield.
 - ☐ (B) To eliminate pests and diseases without impacting plant growth.
 - ☒ (C) To control the shape and size of the plant, which can enhance light penetration and air circulation, ultimately improving fruit production.
 - ☐ (D) To promote rapid growth of the tree without any consideration for fruit load.
20. Explain the significance of using independently controlled remote control valves (RCVs) in a sprinkler system.
- ☐ (A) They are only used in commercial irrigation systems.
 - ☐ (B) They allow for simultaneous watering of all zones.
 - ☒ (C) They enable targeted watering of specific areas, improving efficiency.
 - ☐ (D) They reduce the need for a sprinkler controller.
21. What is the primary purpose of adding treated sewage sludge to soil?
- ☒ (A) To add nitrogen and aerate the soil
 - ☐ (B) To increase soil acidity
 - ☐ (C) To enhance pest resistance
 - ☐ (D) To improve soil drainage

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22. Stratification is the process used by horticulturalists in which seeds are:
- ☐ (A) mechanically abraded before attempting to germinate with warm temperatures
 - ☐ (B) dried, subjected to cold temperatures, and warmed
 - ☒ (C) moistened and exposed to low temperatures before attempting to germinate with warm temperatures
 - ☐ (D) moistened and exposed to high temperatures before attempting to germinate with low temperatures
23. Describe the significance of the topsoil layer in a soil profile.
- ☐ (A) Topsoil is the layer that retains water and prevents erosion.
 - ☐ (B) Topsoil is the deepest layer and contains bedrock.
 - ☒ (C) Topsoil is crucial as it contains the highest concentration of organic matter and nutrients essential for plant growth.
 - ☐ (D) Topsoil is primarily composed of sand and does not support plant life.
24. What is the primary reason that gray (brownline) PVC and galvanized pipe can be used above ground without degradation, unlike white PVC?
- ☐ (A) Galvanized pipe is rust-resistant
 - ☐ (B) Gray PVC is more flexible
 - ☐ (C) Brownline PVC is thicker
 - ☒ (D) White PVC degrades under UV exposure
25. A monoecious species has:
- ☐ (A) floral parts united with members of other whorls.
 - ☐ (B) flowers with all floral whorls.
 - ☒ (C) stamens and pistils on the same plant.
 - ☐ (D) floral parts united with other members of the same whorl.
26. If a farmer wants to diversify their crops by adding fruit trees such as durian and mango, which branch of horticulture should they focus on for best practices and knowledge?
- ☐ (A) Soil Science
 - ☐ (B) Pomology
 - ☒ (C) Pomology
 - ☐ (D) Olericulture
27. Landscape irrigation (sprinkler) systems backflow preventers:
- ☒ (A) must be located higher than the highest spray head in the system
 - ☐ (B) are normally located at the building water supply entrance
 - ☐ (C) cancel programmed operation in the event of rain
 - ☐ (D) help minimize the risk of garden water siphoning into the main building drain