

Test with answers

Turfgrass Culture, ORH3222C Section 7982
and Grad. – Res. And Develop. in Turfgrass Sci. HOS6523 Section
5819

University of Florida - Davie

<http://grove.ufl.edu/~turf/turfcult/>

Philip Busey, turf@ufl.edu

954-579-3932 (cell)

September 28, 2009

Hour Test 1

(Multiple choice - circle the right answers, 3 points each)

1. The first known use of turfgrass was in:
 - a) Bermuda
 - b) British Isles
 - c) Holland
 - d) Japan <<<<<<<<**
 - e) St. Augustine
2. Which warm-season species has high recuperative ability, is responsive to high rates of N fertilization, and is suitable for full-sun environments?
 - a) bermudagrass <<<<<<<<**
 - b) centipedegrass
 - c) seashore paspalum
 - d) tall fescue
 - e) zoysiagrass
3. Good writing is good storytelling, which includes novelty, interest, and plausibility. Plausibility means:
 - a) baffle them with statistics
 - b) reusing phrases and longer passages from other authors
 - c) speculating
 - d) telling the sources of your information <<<<<<<<**
 - e) using the scientific method

4. The most difficult thing to measure for irrigation budgeting is:
 - a) Evapotranspiration
 - b) Precipitation rate from a sprinkler system
 - c) Radiant energy
 - d) Rainfall
 - e) Root available water <<<<<<<<**
5. The production of carbon dioxide from turf, involving the consumption of carbohydrates, is from:
 - a) evapotranspiration
 - b) photosynthesis
 - c) pollination
 - d) respiration <<<<<<<<**
 - e) translocation
6. Basic tools for turfgrass culture, e.g., the lawn mower, were invented during:
 - a) The American Revolution
 - b) The Anglo-Prussian Trade Embargo
 - c) The Digital Revolution
 - d) The Industrial Revolution <<<<<<<<**
 - e) The Renaissance
7. The scientific name for Kentucky bluegrass is:
 - a) *Poa annua*
 - b) *Poa arachnifera*
 - c) *Poa pratensis* <<<<<<<<**
 - d) *Poa trivialis*
 - e) *Stenotaphrum secundatum*
8. Horizontal underground runners:
 - a) culms
 - b) inflorescences
 - c) racemes
 - d) rhizomes <<<<<<<<**
 - e) spikelets

9. Cool-season bunch-type grass that is notable for its wear resistance and is used for overseeding:
- a) bahiagrass
 - b) perennial ryegrass <<<<<<<<**
 - c) Poa trivialis
 - d) red fescue
 - e) tall fescue
10. A type of mower which uses helical blades that pass across a horizontal blade or bedknife; originally developed as a spinoff (no pun) from the textile trade:
- a) flail
 - b) fly
 - c) reel <<<<<<<<**
 - d) rotary
 - e) string trimmer
11. The name of an important UF cultivar of St. Augustinegrass:
- a) Florentine
 - b) Floritam
 - c) Florantan
 - d) Floratam <<<<<<<<**
 - e) Florigami
12. What is the most likely reason a plant requires frequent irrigation:
- a) because it has a small rootzone <<<<<<<<**
 - b) because it has high evapotranspiration
 - c) because it is adapted to the desert
 - d) because it is drought resistant
 - e) because it is susceptible to drought
13. Where does water move under tension (negative pressure) in a plant:
- a) chloroplast
 - b) guard cells
 - c) mitochondrion
 - d) phloem
 - e) xylem <<<<<<<<**

14. A warm-season turfgrass with very coarse leaves:
- a) bermudagrass
 - b) centipedegrass
 - c) St. Augustinegrass <<<<<<<<**
 - d) tall fescue
 - e) zoysiagrass
15. The approximate number of grass species in the world is:
- a) 1 million
 - b) 20,000
 - c) 400
 - d) 10,000 <<<<<<<<**
 - e) 250,000
16. Turfgrass texture refers to:
- a) grain
 - b) growth habit
 - c) leaf width <<<<<<<<**
 - d) shoot density
 - e) uniformity
17. The primary driver of evapotranspiration is:
- a) radiant energy <<<<<<<<**
 - b) rain
 - c) relative humidity
 - d) respiration
 - e) ribosomes
18. Based on the concept of having a protective area, which type of turfgrass propagation involves the smallest risk:
- a) plugging
 - b) sodding <<<<<<<<**
 - c) spot sodding
 - d) sprigging
 - e) stolonizing

19. Based on the concept of compounded exponential growth, which type of turfgrass propagation unit yields the greatest increase:
- a) plugging
 - b) sodding
 - c) spot sodding
 - d) sprigging <<<<<<<<**
 - e) stolonizing
20. Of the seven steps in turfgrass establishment (P-E-G-I-S-I-D) which must occur immediately before rough grading (lettering differs):
- a) construction of irrigation system
 - b) design
 - c) preparation of seedbed
 - d) selection of turfgrass variety
 - e) spraying with nonselective herbicide to remove torpedograss <<<<<<<<**
21. If any nutrients are added to the soil before planting turfgrass, then types that are most justifiable are:
- a) natural nitrogen sources such as cow manure
 - b) nutrients used in small quantities such as Fe (iron) and Mn (manganese)
 - c) quick available N (nitrogen) sources as ammonium nitrate
 - d) quick available organic N (nitrogen) such as urea
 - e) slowly mobile nutrients such as P (phosphorus) and Ca (Calcium) <<<<<<<<**
22. Where does water move under tension (negative pressure) in a pumping system:
- a) flood irrigation
 - b) main line
 - c) municipal water source
 - d) sprinkler head
 - e) suction line <<<<<<<<**
23. The most commonly used cool-season turfgrass, which has rhizomes, is:
- a) *Festuca arundinacea*
 - b) *Agrostis palustris*
 - c) *Cynodon dactylon*
 - d) *Poa pratensis* <<<<<<<<**
 - e) *Lolium perenne*

24. The paper by Kneebone and Pepper on consumptive water use of turfgrasses:
- a) Showed that drought-conditioned turfgrass uses less water
 - b) Showed that warm season grasses have higher water use
 - c) **Showed that water use varies by management and grass <<<<<<<<**
 - d) Showed that water use is determined mainly by management
 - e) Showed that water use is determined mainly by type of grass
25. A part of the grass leaf that clasps:
- a) auricle
 - b) bract
 - c) collar
 - d) **sheath <<<<<<<<**
 - e) spikelet
26. C₃ grasses:
- a) are most commonly propagated vegetatively
 - b) are limited by sunlight concentration, performing best at high radiation
 - c) have heavy walled bundle sheath cells
 - d) **thrive best in cool climates <<<<<<<<**
 - e) thrive best in warm climates
27. The scientific name of 'Common' bermudagrass is:
- a) **Cynodon dactylon <<<<<<<<**
 - b) Eremochloa ophiuroides
 - c) Festuca arundinacea
 - d) Paspalum notatum
 - e) Zoysia japonica
28. The soil particle that most dominates soil physical properties is:
- a) **clay <<<<<<<<**
 - b) gravel
 - c) organic matter
 - d) sand
 - e) silt

(Short essay - 8 points each)

29. In the Kneebone article (Kneebone, W. R. and I. L. Pepper. 1982. Consumptive water use by sub-irrigated turfgrasses under desert conditions. Agron. J. 74:419-423) explain how St. Augustinegrass and tall fescue may have measured as providing unrealistically high evapotranspiration rates. In other words, there was a possible bias and confounded effect due both to the way the grasses were maintained as well as the way the experiment was designed. Explain:

Answer:

St. Augustinegrass and tall fescue were mowed at 4 cm instead of 2 cm for the other grasses. While the 4 cm mowing height might have been needed as it is closer to an appropriate cutting height for St. Augustinegrass and tall fescue (8 cm would be appropriate), the different mowing height is confounded with type of grass, and could have had an effect on the measured differences evapotranspiration rate. It has since been shown that higher mowing height is associated with higher rates of evapotranspiration. In addition, the small 1 m X 1 m plot size suggests that plots were exposed to relatively high contribution of edge effect, e.g., grass closest to the edge of plots would receive more wind and radiation and have higher evapotranspiration. The combination of edge effect and confounded mowing heights could have a multiplicative effect in leading to overestimated evapotranspiration rates.

30. List and describe at least four distinctive benefits of turfgrass:

Selected answers:

Conservation – helps protect the soil from erosion

Infiltration – helps allow water to recharge the aquifer

Air conditioning – helps reduce air and surface temperature

Sanitation – reduces soil tracked into buildings

Safety – allows visibility of surfaces for walking and dike inspection

Recreation – provides relatively safe outdoor play areas

Esthetics – provides an attractive green surface

Habitat – provides ecotone, a transition area for wildlife

Economics – provides landscaping features for visitors who bring cash

Fire protection – reduces the chance of woods fires affecting the roof

Security – improves visibility and reduces opportunity for home invaders

Motorist safety – makes it easier to see around an intersection