

### PRACTICE EXAM 3 (from fall 1999)

- 1) \_\_\_\_ is the amount of water vapor in air expressed as the downward pressure exerted by water vapor present in the atmosphere.
  - a) specific humidity
  - b) relative humidity
  - c) absolute humidity
  - d) vapor pressure
  - e) atmospheric pressure
- 2) What type of precipitation occurs if condensation occurs below freezing in the upper atmosphere?
  - a) rain
  - b) sleet
  - c) drizzle
  - d) hail
  - e) snow
- 3) \_\_\_\_ is the condensation of water onto solid surfaces.
  - a) fog
  - b) dew
  - c) rain
  - d) liquification
  - e) moisturization
- 4) The aquifers of the hydrologic cycle are so vast and large that there is no danger of depleting them.
  - a) true
  - b) false
- 5) In a stem, what is the name of the part that is functional in transporting water up stems?
  - a) sap wood
  - b) heart wood
  - c) xylem wood
  - d) phloem
  - e) periderm
- 6) Most of the water a plant loses occurs through the \_\_\_\_\_.
  - a) hydathodes
  - b) stomata
  - c) epidermis
  - d) periderm
  - e) exodermis
- 7) What part of the root absorbs most of the water?
  - a) root hair
  - b) root tip
  - c) epidermis
  - d) endodermis
  - e) cortex
- 8) What type of chemical bond occurs between water molecules and partially explains why a column of water can be pulled up the xylem of stems during translocation?
  - a) covalent bond
  - b) O-bond
  - c) hydrostatic bond
  - d) H-bond
  - e) kinetic bond
- 9) Which of the following plant properties will tend to decrease transpiration?
  - a) waxy leaf
  - b) leaf with small surface area
  - c) vertically orientated leaf
  - d) all will tend to decrease transpiration
  - e) none will tend to decrease transpiration

- 10) \_\_\_\_\_ is a chemical that closes or clogs stomata, thereby decreasing transpiration.
- a) cytokinin
  - b) antistomatants
  - c) stomatal inhibitor
  - d) coatifier
  - e) antitranspirant
- 11) Which outdoor surface irrigation system is used for row crops?
- a) flood
  - b) basin
  - c) chapin tube
  - d) subirrigation
  - e) furrow irrigation
- 12) Which irrigation system would be best to use in xeriscaping?
- a) capillary mat
  - b) basin
  - c) drip
  - d) sprinkler
  - e) pulse
- 13) Which greenhouse irrigation system has a small tube (like an IV tube) that supplies water directly to each pot?
- a) chapin tube
  - b) microsprinkler
  - c) capillary mat
  - d) ebb-and-flow subirrigation
  - e) pizza tube
- 14) \_\_\_\_\_ is a compacted, impermeable layer in the A horizon that is due to repeated tilling or plowing.
- a) hard pan
  - b) rototiller pan
  - c) clay pan
  - d) plow pan
  - e) peter pan
- 15) Which horizon in the soil is the parent material?
- a) A
  - b) B
  - c) C
  - d) D
  - e) E
- 16) A \_\_\_\_\_ soil contains 20-65% organic matter.
- a) mineral
  - b) muck
  - c) organoleptic
  - d) peat
  - e) humic
- 17) Which of the following IS NOT a function of organic matter in the soil?
- a) increases water holding capacity
  - b) may supply nutrients upon decay, if low C:N
  - c) supplies food source for microbes
  - d) increases cation exchange capacity
  - e) all are functions of organic matter
- 18) From a physical standpoint, which soil particle is structurally the most simple?
- a) clay
  - b) sand
  - c) silt
  - d) organic matter
- 19) If I wanted to make my garden soil flocculate, and therefore have better structure, I should add \_\_\_\_\_.
- a) Na
  - b) K
  - c) Ca
  - d) Mg
  - e) S

- 20) Clay is composed of \_\_\_\_\_, which are flat, sheet-like plates laminated into stacks.
- a) grana
  - b) membranes
  - c) aggregates
  - d) sheets
  - e) micelles
- 21) Which soil mineral particle contributes most to a soil's water holding capacity?
- a) clay
  - b) sand
  - c) silt
- 22) \_\_\_\_\_ is the milliequivalents per 100 grams of dry soil.
- a) cation exchange capacity
  - b) nutrient capacity
  - c) percent base saturation
  - d) pH
  - e) molarity
- 23) A pH above 7 is \_\_\_\_\_.
- a) acid
  - b) neutral
  - c) basic
- 24) Acid soils primarily occur in \_\_\_\_\_.
- a) west Texas
  - b) east Texas
- 25) Which of the following can be added to acid soils to increase pH?
- a) elemental sulfur
  - b) iron sulfate
  - c) gypsum
  - d) dolomite
  - e) urea
- 26) A \_\_\_\_\_ has a pH of 7-8.5, and has greater than 2,000 ppm total soluble salts.
- a) saline soil
  - b) sodic soil
  - c) saline-sodic soil
  - d) acid soil
- 27) Field soils pack too much when placed in a container, which is one of the reasons why field soil is not used when growing plants in containers.
- a) true
  - b) false
- 28) Which of the following is an inorganic growing medium amendment?
- a) perlite
  - b) bagasse
  - c) coir
  - d) sphagnum
  - e) processed sludge
- 29) \_\_\_\_\_ is adsorbed onto soil particles and is held at less than -31 bars of tension.
- a) capillary water
  - b) hygroscopic water
  - c) chemically combined water
  - d) gravitational water
- 30) \_\_\_\_\_ is when a plant wilts, but cannot recover when placed in a saturated atmosphere.
- a) incipient wilting
  - b) incipient wilting point
  - c) permanent wilting
  - d) permanent wilting point
- 31) Mulches would be good to use in xeriscaping.
- a) true
  - b) false

- 32) How many essential elements are required by plants?
  - a) 17
  - b) 14
  - c) 8
  - d) 6
  - e) 3
  
- 33) Which of the following is a macronutrient?
  - a) Fe
  - b) Mo
  - c) Mn
  - d) Ca
  - e) Cu
  
- 34) Which of the following is an immobile nutrient?
  - a) N
  - b) K
  - c) S
  - d) Mg
  - e) Mn
  
- 35) A garden center is selling a 50 pound bag of 10-10-10 fertilizer for \$9.00 and a 50 pound bag of 15-10-15 fertilizer for \$11.00. Which is the best purchase?
  - a) the 10-10-10
  - b) the 15-10-15
  - c) they are both equal
  
- 36) Which ratio fertilizer would be best to use on the non-flowering shade trees in your yard in order to favor vegetative growth?
  - a) 1-1-1
  - b) 2-1-1
  - c) 1-2-2
  
- 37) Which of the following is either required for chlorophyll synthesis or needed for photosynthesis?
  - a) Zn
  - b) Ca
  - c) B
  - d) K
  - e) Mo
  
- 38) Urea is a \_\_\_\_\_ fertilizer.
  - a) K
  - b) Ca
  - c) N
  - d) Mo
  - e) S
  
- 39) When organic matter is added to soil, its N is converted by the process of mineralization to which of the following N forms?
  - a) nitrate
  - b) nitrite
  - c) nitrogen gas
  - d) ammonium
  
- 40) What is the major form of N absorbed by plants from the soil?
  - a) nitrate
  - b) nitrite
  - c) nitrogen gas
  - d) ammonium
  
- 41) Pine needles have a very high C:N ratio. If you added pine needles to your flower beds, it would \_\_\_\_\_ the soil.
  - a) add N to
  - b) not effect the N in
  - c) deplete N from

- 42) Which of the following is a blue-green algae that can fix N and may form a symbiotic relationship with Azolla or Cycads?
- a) Actinomycetes
  - b) Anabaena
  - c) Rhizobium
  - d) Azotobacter
- 43) Which of the following nutrients IS NOT classified as a heavy metal?
- a) Fe
  - b) Cu
  - c) Mn
  - d) Mo
  - e) Zn
- 44) A brown or dead area on leaves is called \_\_\_\_\_.
- a) necrosis
  - b) chlorosis
  - c) paleing
  - d) etiolation
  - e) jaundice
- 45) A deficiency of which nutrient causes overall chlorosis of new leaves only?
- a) N
  - b) K
  - c) Mo
  - d) Mn
  - e) Fe
- 46) Witches broom is a deficiency of \_\_\_\_\_.
- a) Ca
  - b) B
  - c) Fe
  - d) Zn
  - e) Cu
- 47) Which of the following is a Mg fertilizer?
- a) superphosphate
  - b) magnesium potassium
  - c) gypsum
  - d) Epsom salt
  - e) borax
- 48) All limes are also \_\_\_\_\_ fertilizers.
- a) Mg
  - b) Cu
  - c) N
  - d) S
  - e) Ca
- 49) Which Mn fertilizer would be best to use on basic or alkaline soils?
- a) sulfate
  - b) chelate
- 50) What key event happened this past Monday in Ole Doc Reed's family life (for the third time!)?
- a) he became a Grandpa
  - b) his wife became a grandmother, actually a Nana
  - c) his daughter became a Mom
  - d) his son became an Uncle
  - e) Jacks Roderick came into this world yelling and screaming, but otherwise healthy and well!

**KEY**

- 1) d
- 2) e
- 3) b
- 4) b
- 5) a
- 6) b
- 7) a
- 8) d
- 9) d
- 10) e
- 11) e
- 12) c
- 13) a
- 14) d
- 15) c
- 16) b
- 17) e
- 18) b
- 19) c
- 20) e
- 21) a
- 22) a
- 23) c
- 24) b
- 25) d

- 26) a
- 27) a
- 28) a
- 29) b
- 30) c
- 31) a
- 32) a
- 33) d
- 34) e
- 35) b
- 36) b
- 37) d
- 38) c
- 39) d
- 40) a
- 41) c
- 42) b
- 43) d
- 44) a
- 45) c
- 46) d
- 47) d
- 48) e
- 49) b
- 50) e