2018 Iowa FFA Nursery/Landscape CDE
Landscape Test
DO NOT WRITE ON THE TEST

1. Adding organic matter to sandy soils does all the following **except**?
   a. Hold more water.
   b. Improve soil aggregation.
   c. Help hold plant food.
   d. Organic matter does all the above.

2. Plant leaves do all of the following **except**?
   a. Produce food.
   b. Give off oxygen.
   c. Produce carbon dioxide.
   d. Photosynthesize.
   e. Plant leaves do all the above

3. Which one of these broadleaf evergreen shrubs would **not** produce flowers with colorful petals or colorful fruit?
   a. Boxwood.
   b. Rhododendron.
   c. Meserveae holly.
   d. All flower or produce colorful fruit.
   e. None flower.

4. In the root pruning process, lateral roots are cut, resulting in the formation of
   a. Small fibrous roots.
   b. Large branches.
   c. Better quality flowers.
   d. None of the above.

5. Shrubs that bloom on this year's wood are pruned
   a. Immediately after blooming.
   b. In the fall after frost.
   c. In the spring just before growth starts.
   d. In midsummer.

6. To lower the pH of the soil and raise soil acidity,
   a. More nitrogen is added to the soil.
   b. Sulfur is added to the soil.
   c. A complete fertilizer is added to the soil.
   d. None of the above.

7. Biological control examples include
    a. Using Roundup Ready grass.
    b. Pulling weeds in the nursery.
    c. Ladybugs introduced to attack aphids.
    d. Using Malathion to control white fly.
    e. All are biological control examples.

8. Phototropism is a natural phenomenon in which
    a. Bright light produces disease symptoms in plants.
    b. One plant secretes chemicals that inhibit root growth or seed germination of other seeds.
    c. Two plants grow better when planted close together.
    d. Plants grow towards sunlight.

9. Which of these statements are not accurate when using Integrated Pest Management (IPM)?
    a. Apply a chemical treatment on the entire crop at the first sight of a pest problem.
    b. Prune out the affected area of the plant.
    c. Scout the crop to determine if the cost of treatment will pay for itself.
    d. Consider using predator insects or natural insecticides from the Neem tree.

10. There are 16 essential nutrients required for plant growth. They are divided into 4 groups: those that come from the air, major (or macro) elements, secondary nutrients, and minor nutrients (microelements). Which element below is **not** a secondary element?
    a. Potassium
    b. Calcium
    c. Magnesium
    d. Sulfur

11. Many business letters end with some notations to help the recipient get the most information about the correspondence. Which of these notations are **not** usually used in a business letter?
    a. Enc (2) -- means that 2 items beside the letter are in the envelope.
    b. cc: Sam Smith -- means that Sam Smith also received a copy of the letter.
    c. FYI: -- means for your information only.
    d. All are common notations in a business letter.

12. Studying the product or service of your business and why customers would want to buy it is called the
    a. Buying function.
    b. Distribution function.
    c. Promoting function.
    d. Selling function.

13. When establishing the grade and soil condition for starting a new lawn, which of these are **not** true?
    a. There should be at least 6 inches of topsoil.
    b. The soil should be high in clay to hold water and nutrients.
    c. Slope should be less than 15 %.
    d. Rocks and hard dirt clods should be removed

14. Sprigging is
    a. spreading shredded stolons of grass to establish a lawn.
    b. Planting individual plants, runners, or stolons at spaced intervals.
    c. Removing stolons from grass to thicken the lawn.
    d. All the above.

15. Which of these would **not** be part of the hardscape paving of a landscape design?
    a. Tile.
    b. Brick.
    c. Crushed stone.
    d. Concrete.
    e. All are hardscape paving materials.

16. Which of these plants are **not** monocots?
    a. Kentucky bluegrass.
    b. Centipede grass.
    c. Red fescue.
    d. All are monocots.
    e. None are monocots.

17. Which is **not** a vegetative method of starting a lawn?
    a. Sprigging
    b. Stolonizing
    c. Sodding
    d. All are vegetative methods.

18. A complete fertilizer high in _____ is best for seeding grass in new lawns
    a. Nitrogen
    b. Phosphorus
    c. Potassium
    d. Calcium

19. Which pesticide is safest to use from a acute toxicity standpoint?
    a. Oral LD_{50} of 25
    b. Oral LD_{50} of 60
    c. Dermal LD_{50} of 1750
    d. Inhalation LC_{50} of 15

20. Plants transpire
    a. Through their leaves.
    b. Only in poorly drained soils.
    c. 24 hours a day.
    d. Through their roots.

21. As you look for examples of these kind of plants in your landscape, which are you least likely to find in Iowa?
    a. Deciduous broadleaves
    b. Deciduous conifers
    c. Evergreen broadleaves
    d. Evergreen conifers

22. While not commonly done, if you choose to reuse potting soil, you should sterilize it by
    a. running steam through the soil until it reaches a temperature of at least 210 for at least 5 minutes
    b. use dry heat to dry the soil and make sure that the temperature reaches 130 degrees F for 2 hours.
    c. heating the soil to 180 degrees F for 30 minutes.
    d. None of the above.

23. In grafting, care must be used to match which layer of the scion and rootstock?
    a. Woody stem (xylem).
    b. Bark (phloem).
    c. Cambium.
    d. All must be matched.

24. Xeriscaping is a landscaping process that incorporates
    a. No water in the landscape.
    b. Draining water from the root zones of plants.
    c. Water conservation for the future of our environment.
    d. All shade loving plants.

25. Mulching can reduce water loss by
    a. 50 percent.
    b. 35 percent.
    c. 90 percent.
    d. 25 percent.

<u>Answer Key</u>
1. D
2. E
3. A
4. A
5. C
6. B
7. C
8. D
9. A
10. A
11. C
12. D
13. B
14. B
15. C
16. D
17. D
18. B
19. C
20. A
21. B
22. C
23. C
24. C
25. C

2018 Iowa FFA Nursery/Landscape CDE
2018 Landscape Estimation
DO NOT WRITE ON THE TEST

This residential property was purchased by a young family with two children, ages 4 & 6. They love the idea of a large lawn area for recreation, but the parents are also landscaping enthusiasts and welcome the opportunity to maintain plants. Note: the scale of the drawing is 1" = 10'

Mark all answers carefully on your scantron sheet.

1. A line on the drawing that is 3.5 inches long with a designated scale of 1" = 10', then it represents a line _____ long in the landscape.
    a. 32 feet
    b. 30 feet
    c. 35 feet
    d. 45 feet

2. Based on the scale given for this plan, an actual measurement of 70 feet equals _____ in the design.
    a. 4 inches
    b. 7 inches
    c. 7.5 inches
    d. 12 inches

3. Based on the scale given for this plan, approximately how wide is the driveway on the southwestern side of the house?
    a. 8 feet
    b. 12 feet
    c. 10 feet
    d. 15 feet

4. What is the length of the house (measure the north side of the roof)?
    a. 52.8 feet
    b. 50 feet
    c. 66 feet
    d. 46 feet

5. Measure the sidewalk on the south side of the house, what is the total area that it covers?
    a. 102 sq ft
    b. 110 sq ft
    c. 108 sq ft
    d. 115 sq ft

6. Regarding the sidewalk in question 5, approximately how many stones will you need if you use a stone that measures 16 inches by 16 inches?
   a. 77 stones
   b. 57 stones
   c. 58 stones
   d. 78 stones

7. Your total bill to the homeowner for the purchase and installation of the plant material in this plan was $16,329. Your profit is 28% of that total. How much money will you make from this job?
   a. $5,382.68
   b. $11,756.88
   c. $4,572.12
   d. $4,898.70

8. There are 2 flowering trees proposed for this plan—labeled as #6 in the SE corner and an identical tree on the north edge of the property. If they cost $168 each, plus tax, what is the total cost of the trees with a 8% sales tax?
   a. $357.60
   b. $362.88
   c. $366.24
   d. $376.80

9. Which of the following would NOT be an appropriate choice for the plant labeled #5 on the north side if the desire is a decorative shrub?
   a. *Buxus microphylla cv.*
   b. *Cotoneaster divaricatus*
   c. *Forsythia x intermedia cv.*
   d. *Acer rubrum cv.*

10. You make a profit off the sale of a decorative bench in annual plant bed area labeled #10 on the north side of the house. Your wholesale cost was $187.75 and you charged the client $244.21 retail. What was your percent mark-up of the wholesale cost?
    a. 30%
    b. 25%
    c. 28%
    d. 36%

11. The lawn area has a brick moving edge installed around it totaling 320 linear feet. The 4x8 inch bricks will be laid end to end. You always plan to order an extra 15% for cutting waste. How many bricks should you get for the edging in this job?
    a. 429
    b. 552
    c. 600
    d. 528

12. The pond that is labeled #12 in the northeast corner will need to be filled with a sufficient amount of water to accommodate fish. If the finished size is approximately 12 feet wide by 8 feet long and the water must be 24 inches deep, what volume of water is needed to fill the pond?
    a. 2200 cubic feet
    b. 192 cubic feet
    c. 205 cubic feet
    d. 2304 cubic feet

13. The planted areas to be mulched around the outside edges of this lawn measure approximately 1275 square feet. You will use shredded bark mulch applied in a layer 3 inches thick. How many cubic yards of mulch will you need for this design?
    a. 318.75 cubic yards
    b. 11.8 cubic yards
    c. 13.6 cubic yards
    d. 337.5 cubic yards

14. If the driveway is poured concrete at a thickness of 9 inches, how many cubic yards of concrete will be needed to complete the driveway?
    a. 8 cubic yards
    b. 225 cubic yards
    c. 9 cubic yards
    d. 10 cubic yards

15. You will sod the turf area. They total 2500 square feet. The two sources of sod listed below will cut to order the sod amount you want, and they have equivalent shipping charges:
    Company A: sod in rolls = 18 inches by 12 feet long at $5.30 per roll
    Company B: sod in squares = 24 inches by 36 inches at $1.95 per square
    Which offers the lower cost for the sod you need?
    a. Company A
    b. Company B
    c. Both will cost the same
    d. There is not enough information given to compare costs.

16. The five perennial flower beds throughout the property total 250 square feet. Each needs organic matter added. You will provide this by mixing in a 3-inch-deep layer of peat moss. You obtain peat moss in bags that hold 3 cubic feet each. How many bags will you use?
    a. 20 bags
    b. 21 bags
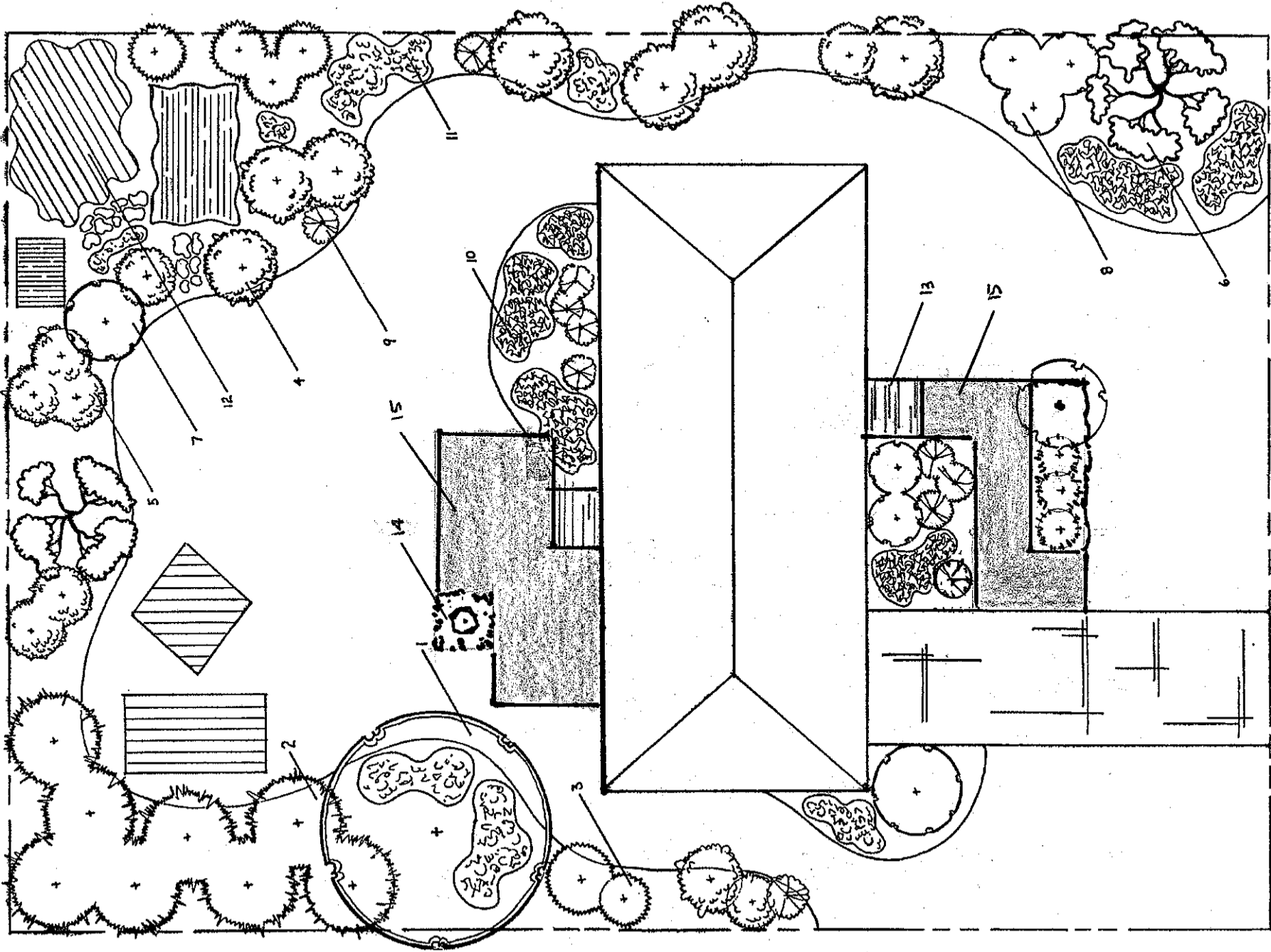   c. 23 bags
    d. 22 bags

17. The large tree symbol, labeled #1 on the west side of the property, has a canopy diameter of 15 feet. Assuming the canopy is circular, what is the area of the tree canopy (area of a circle $A = \pi r^2$)?
    a. 160 square feet
    b. 177 square feet
    c. 200 square feet
    d. 907 square feet

18. You have a total of approximately 250 square feet of annual plants scattered throughout this design. You planned to space the plants 12 inches on center, which require 250 plants. The owners asked you to space the plants 9 inches apart for a denser look. At the 9 inches on center spacing, you will need _____ as many plants. ($144/x^2$ = plants per square foot, x = on center spacing)
    a. .56 times
    b. 1.5 times
    c. 1.78 times
    d. 3.56 times

19. An ornamental shrub that will add a pop of color is the plant of choice for the tree labeled #6 on the southeastern corner of the lot. Which plant below would you choose for this characteristic?
    a. *Euonymus alatus*
    b. *Hedera helix cv.*
    c. *Abies concolor*
    d. *Quercus alba*

20. Your preferred nursery course for evergreens offers the following discount on 2-gallon container plants when you buy large quantities:

    Number of plants purchased: 1 – 5 = catalog price
                                    6 – 20 = 12% discount
                                    21+ = 30% discount

    For the 8 small trees on the northwest corner labeled #2, you buy 2-gallon containers that list at $62.00 each. What will be your cost after discounts for these plants?
    a. $372.00
    b. $347.20
    c. $436.48
    d. $450.00

Landscape Estimation Plan

Scale: 1" = 10

KEY

1. (C) 3.5" * 10'/1" = 35'

2. (B) 70' /10' = 7" or 10*7 = 70 ft

3. (C) Measure with 10 scale = 10 ft

4. (D) Measure with 10 scale = 46 ft

5. (A) (17.5'* 4') + 2(4'*4') = 102 sq ft

6. (C) 58 stones; 16" x 16" = 256 sq in/144 sq in per square foot = 1.78 sq ft per stone, 102/1.78 =
   57.3 stones, round up to 58

7. (C) $16,329 * .28 = $4,572.12

8. (B) $168*2 =$336*1.08= $362.88

9. (D) Acer rubrum cv. – Red maple is a deciduous tree, not a shrub

10. (A) whole * % = part $244.21 - $187.75 = $56.46 $187.75(x) = $56.46 56.46/187.75 = 30%

11. (B) 320 * 12 = 3840in/8 = 480 + 15% = 480 + 72 = 552 bricks

12. (B) V = L x W x D = 12' * 8' * 2' = 192 cubic feet

13. (B) 3" * 1'/12" = 0.25' mulch layer 1275 cu ft * 0.25 ft = 318.75 cu ft * 1 cu yd/27 cu ft = 11.8
    cu yd

14. (C) Driveway is 30 ft long by 10 ft wide. 30 x 10 x .75 = 225 cu ft * 1 cu yd/27 cu ft = 8.33
    yards, round up to 9 yards

15. (A) Company A: 18" x 12' = (18" * 1'/12") * 12' = 1.5' * 12' = 18 sq ft/roll @ $5.30 per roll
    $5.30/18 = $0.294 per sq ft
    Company B: 24" x 36" = 2' * 3' = 6 sq ft/square @ $1.95/square   1.95/6 = $0.325 per sq ft

16. (B) 3" * 1'/12" = 0.25'   250 sq ft * 0.25 ft = 62.5 cu ft/3 cu ft per bag = 20.83 round to 21 bags

17. (B) If d = 15' then r = 7.5 $A = \pi r^2$ π x 7.5^2 = 177 square feet

18. (C) (250 sq ft spaced/plant planned = 12" x 12" = 1' x 1' = 1 sq ft/plant = 250 plants
    Plant spacing requested = 9 inches on center 9" x 9" = .75' x .75' = .5625 ft/plant
    250 sq ft/.5625 sq ft per plant = 444 plants   444/250 = 1.78 times as many plants

19. (A) Euonymus alatus; burning bush turns a red color adding a pop of color.

20. (C) $62 * 8 shrubs = $496 – 12% = $436.48