

Iowa FFA
2001 Landscape/Nursery CDE
General Knowledge Examination

1. _____ seeding is when seeds are sown in a separate place from where the plants will eventually grow to maturity.
 - a. Direct
 - b. Indirect
 - c. Sideways
 - d. Top
 - e. Broadcast

2. How are many seedlings sold to minimize transplant shock?
 - a. As seeds
 - b. As mature transplants
 - c. As plugs
 - d. As hybrid seeds
 - e. AS GMO seedlings

3. What is done to enhance or prime seeds?
 - a. Scratched with sandpaper
 - b. Scratched mechanically
 - c. Scarification with methyl alcohol
 - d. Soaked in a salt solution
 - e. A or B

4. What is the first stage of growth called after a cutting starts to grow?
 - a. Callus formation
 - b. Scab formation
 - c. Stem formation
 - d. Softwood formation
 - e. Stage 1 cambium

5. Which of the following should not be done when preparing the rooting media and container?
 - a. Allow for air circulation in the media
 - b. Media should be able to hold moisture
 - c. Media should be sterile
 - d. Container should have drainage holes
 - e. Used containers should not be cleaned and disinfected

6. Name two items that cuttings should be stored in to maintain moisture?
 - a. Sand or peat moss
 - b. Sawdust or sphagnum moss
 - c. Sawdust or pea gravel
 - d. Pine bark mulch or peat moss
 - e. Sawdust or pine needles

7. The term that best describes this definition is: "measures pesticide poison after repeated exposure".
 - a. Chronic toxicity
 - b. Lethal dose
 - c. LD
 - d. Acute inhalation
 - e. Acute toxicity

8. The three body regions of an insect are the?
 - a. Head, legs, thorax
 - b. Legs, thorax, abdomen
 - c. Head, thorax, abdomen
 - d. Legs, head, abdomen
 - e. None of these

9. The leaves of narrow leaf evergreens may be either?
 - a. Alternate or Scale like
 - b. Simple or Compound
 - c. Alternate or Opposite
 - d. Scale like or Opposite
 - e. Needlelike or Scale like

10. Which of the following is not a narrow leaf evergreen?
 - a. Yew
 - b. Juniper
 - c. Red Pine
 - d. Wisteria

11. In the mid-west, the recommended time to transplant perennials is?
 - a. Winter and summer
 - b. Fall and spring
 - c. Winter, spring, or fall
 - d. Summer
 - e. Anytime as long as the ground is not frozen.

12. What would be two common vines that could be used in a landscape?
 - a. African violets and silver lace vine
 - b. Wisteria and English Ivy
 - c. Clematis and English daisy
 - d. Boston Ivy and clematis
 - e. Tulips and Boston Ivy

13. If the proper ground cover plants are selected, _____ should not be necessary after the first year?
 - a. Sunning
 - b. Watering
 - c. Fertilizing
 - d. Weeding
 - e. Pruning

14. Which groundcover needs moist soil high in organic matter, shade to grown, has a white flower and small, shiny green leaves?
 - a. Evergreen candytuft
 - b. Creeping mahonia
 - c. Heath
 - d. Wintergreen
 - e. All the above

15. At what angle should stems be cut for pruning?
 - a. 45 degree angle
 - b. 60 degree angle
 - c. 90 degree angle
 - d. 20 degree angle
 - e. 180 degree angle

16. Cutting off all the lateral roots of the plant in a circle around the stem is called?
- Root pruning
 - Lateral pruning
 - Stem pruning
 - Thinning out
 - Heading back
17. Which of the following plants should be pruned to mainly control shape and size?
- Privet
 - Pine
 - Azalea
 - Oleander
 - Holly
18. Which of the following plants should be pruned after flowering, then pinch back the new top growth to stimulate heavier blooming?
- Privet
 - Pines
 - Azalea
 - Oleander
 - Holly
19. For lawns; how many inches of topsoil should be spread over the rough grade subsoil?
- Ten
 - Eight
 - Six
 - Four
 - Two
20. If the slope of a lawn is greater than _____ percent, then it should be covered with plants that do not require mowing.
- 2.5 percent
 - 5 percent
 - 10 percent
 - 12.5 percent
 - 15 percent

21. Specially prepared fertilizers for new lawns contain high levels of what element?
- Nitrogen
 - Phosphorous
 - Potassium
 - Sulfur
 - Iron
22. The most serious pests that attack broadleaf evergreens include?
- Gnats
 - Mites
 - Mealybugs
 - Aphids
 - All of the above
23. Bare root trees are planted only when they are?
- Showing white root hairs
 - Awake
 - Dormant
 - Wet
 - Blooming
24. After a tree has been transplanted, to ensure a good supply of water, a _____ should be formed around the base of the tree to hold water?
- Tank
 - Hill
 - Dam
 - Pool
 - Berm
25. What term best describes the size of the leaves as a characteristic for landscape purposes?
- Form
 - Ornamental Use
 - Hardiness
 - Texture
 - Shading

2001 Landscape Nursery General Knowledge Exam KEY

1 b
2 c
3 d
4 a
5 E
6 a
7 a
8 C
9 E
10 D
11 B
12 D
13 B
14 D
15 C

16 a
17 a
18 C
19 C
20 E
21 B
22 B
23 C
24 E
25 D

Iowa FFA Landscape / Nursery CDE

Assessment and Solutions

Please darken the correct letter on the sheet provided

Station #1

Using the attached 2x4 boards figure the % slope for this grade. (Assume the board is level)

- a. 2%
- b. 9%
- c. 12%
- d. 17%

Station #2

This tiller is not running properly. What is the problem?

- a. the tiller is nearly out of gas
- b. there isn't any spark
- c. the start switch is in the off position
- d. the tiller needs an overhaul

Station #3

This tree needs to be tagged at the nursery. You have been given the task of measuring it. Using the caliper provided, what is the correct caliper size of the tree? (for 2" caliper tree or smaller measure 6" up on the trunk)

- a. 1/2"
- b. 1"
- c. 2"
- d. 3"

Station #4

How many bricks would you need for the area outlined by the connected 2x4s and the brick provided?

- a. 50
- b. 75
- c. 110
- d. 120

Station #5

Timber Pine Nursery has to plant a bed of Hostas. What conditions are best for these perennials?

- a. full sun
- b. full shade
- c. partial shade
- d. none of the above

Station #6

I have a 50# bag of fertilizer with an analysis of 20-20-20. How many pounds of N are contained in the bag?

- a. 5 lbs.
- b. 10lbs.
- c. 15lbs.
- d. 20lbs.

Station #7

I have a 50# bag of fertilizer with an analysis of 14-14-14. How many pounds of K are contained in the bag. K is supplied in the form of K_2O , which is made up of 83% K.

- a. 2.2 lbs.
- b. 3.5 lbs.
- c. 5.8 lbs.
- d. 7 lbs.

Station #8

What would you use this following tool for?

- a. Level a grade
- b. Establish a straight line
- c. Layout contour lines
- d. All the above

Station #9

What size container is the following plant in?

- a. quart
- b. 1 gallon
- c. 2 gallon
- d. 5 gallon

Station #10

Which of the following tools would be the most appropriate to use on the tree branch provided?

- a. Hand prunners
- b. Loppers
- c. Hedge Shears
- d. Saw

2001 Iowa FFA
Landscape/Nursery CDE
Problem Solving Activity

Problem 1:

Phil owns and operates his own lawn service. He has been hired by Cindy to fertilize her lawn. Her lawn is laid out that it is a total of 3720 square feet. Phil is applying a 20 – 10 – 10 fertilizer to this lawn at the rate of 2.5 pounds of actual nitrogen per 1,000 square feet. If Phil's cost of this fertilizer is \$ 25.00 per actual pound of nitrogen (he buys it wholesale) and then he marks it up 100% and also charges Cindy \$.02 per square foot for applying it, what is Cindy's bill (not including tax)?

- a. \$ 74.40 b. \$120.90 c. \$136.90 d. \$167.40 e. none of these

Problem 2:

Thomas wants to add landscape bricks in a new patio. The bricks he wants to use are 4 inches wide, 8 inches long, and 3 inches thick. They are currently on sale for \$.89 each. If you purchase more than 1000, they are discounted an additional 15%. The area that Thomas wants to make into a new patio is 18 feet wide and 26 feet long. If he only purchases what he needs and sales tax is 6%, what is his bill? (carry out area of bricks to 3 decimal points)

- a. \$1869.37 b. \$1988.69 c. \$1729.49 d. \$ 1063.27 e. none of these

Problem 3

Barb would like to purchase trees for her yard. A river birch she wants retails for \$48.89; a pin oak retails for \$37.99; and the 3 Norway spruces retail for \$27.99 each. She hires the local nursery to plant the trees for her and they charge \$27.00 per hour. It takes 1.5 hours to plant and mulch the trees. Delivery charges are \$5.00 per tree. If the sales tax is 6%, what is Barb's total bill?

- a. \$250.53 b. \$229.33 c. \$169.99 d. \$157.87 e. none of these

Problem 4

Jon's SAE project deals with a Christmas tree farm. He has a patch of ground that is 470 feet wide and 580 feet long. It is on a 3 to 5% sloping ground that is a clay-loam soil. The local extension service recommends a population rate of 700 trees per acre. Jon can buy his trees from the state nursery as seedlings for \$ 65 each. What will be the cost of Jon's trees for this Christmas tree farm? (Assume no sales tax).

- a. \$253.13 b. \$2143.74 c. \$2848.30 d. \$4381.07 e. None of these

Problem 5

Todd owns and operates a turfgrass management company. He is hired by the local school to take care of the football field. When he does his inspection in early July, he notices there is an infestation of mold growing on the field. He recommends that the school sprays the entire field and they agree. Todd uses chemical XYZ, which is applied at the recommended rate of 1.0 gallons per 100 square feet. Chemical XYZ is mixed with water at the rate of .1 cups per gallon. If Todd charges the school \$.005 per square foot for spraying on the fungicide and the school purchases the chemical from him at the cost of \$125 per gallon, what is the cost to the school for treating this football field? Assume no sales tax. (Football field is 40 yards wide and 120 yard long)

- a. \$216.00 b. \$337.50 c. \$457.92 d. \$2497.50 e. None of these

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- a. \$ 74.40 b. \$120.90 c. \$136.90 **d. \$167.40** e. none of these

Answer: $\frac{2.5 \text{ lbs N}}{1000 \text{ sq ft}} \times .20 \times 3720 \text{ sq ft} = 1.86 \text{ lbs N}$ $\$25.00 + 100\% = \$50/\text{pound} \times 1.86 \text{ lbs} = \93.00
 $3720 \text{ sq ft} \times \$.02/\text{sq ft} + \$93.00 = \mathbf{\$167.40}$

Problem 2:

Thomas wants to add landscape bricks in a new patio. The bricks he wants to use are 4 inches wide, 8 inches long, and 3 inches thick. They are currently on sale for \$.89 each. If you purchase more than 1000, they are discounted an additional 15%. The area that Thomas wants to make into a new patio is 18 feet wide and 26 feet long. If he only purchases what he needs and sales tax is 6%, what is his bill? (carry out area of bricks to 3 decimal points)

- a. \$1869.37 b. \$1988.69 **c. \$1729.49** d. \$ 1063.27 e. none of these

Answer: each brick has an area of .222 sq ft. $18 \text{ ft} \times 26 \text{ ft} = 468 \text{ sq ft}$ $468 / .222 = 2108 \text{ bricks}$
 $\$.89 / 1.15 = \$.774 \text{ per brick} \times 2108 = \$1631.59 + 6\% = \mathbf{\$1729.49}$

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- a. **\$250.53** b. \$229.33 c. \$169.99 d. \$157.87 e. none of these

Answer: $((1 \times \$48.89) + (1 \times \$37.99) + (3 \times \$27.99)) + (1.5 \text{ hrs} \times \$27/\text{hr}) + (5 \times \$5/\text{tree}) + 6\% = \mathbf{\$250.53}$

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- a. \$253.13 b. \$2143.74 c. **\$2848.30** d. \$4381.07 e. None of these

Answer: $470 \text{ ft} \times 580 \text{ ft} = 272,600 \text{ sq ft} / 43560 \text{ sq ft / acre} = 6.26 \text{ acres} \times 700/\text{acre} \times \$.65/\text{tree} = \mathbf{\$2848.30}$

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- a. \$216.00 b. \$337.50 c. \$457.92 d. \$2497.50 e. **None of these**

Answer: $120 \text{ ft} \times 360 \text{ ft} = 43,200 \text{ sq ft}$ application charge = $43,200 \text{ sq ft} \times \$.005/\text{sq ft} = \mathbf{\$216.00}$

$$\text{Chemical} = \frac{1.0 \text{ Gallon}}{100 \text{ sq ft}} \times 43,200 \text{ sq ft} = 432 \text{ gallons water} \times \frac{.1 \text{ cups}}{\text{gallon}} = 43.2 \text{ cups} / 16 \text{ cups/G} = 2.7 \text{ G}$$

$$2.7 \text{ gallons} \times \$125/\text{gallon} = \mathbf{\$337.50} + \$216 = \mathbf{\$553.50}$$

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**Iowa State FFA
Nursery & Landscape Drawing Practicum
June 21, 2001**

1. **Who is the landscape plan being produced for?**
 - a. Mr. & Mrs. Phil Wilkinson
 - b. EDAW inc.
 - c. Mr. & Mrs. William Peters
 - d. Mr. & Mrs. William Wall

2. **What is the spread of the Red Oak labeled on the plan?**
 - a. 15ft
 - b. 22ft
 - c. 33ft
 - d. 51ft

3. **In the south west corner of the plan how many spruce plants will be used to create the screen?**
 - a. 5
 - b. 15
 - c. 20
 - d. 25

4. **What is the square footage that the swimming pool takes up? (Just the pool, not the pool terrace or pool house)**
 - a. 250 sq. ft.
 - b. 525 sq. ft.
 - c. 780 sq. ft.
 - d. 1000 sq. ft.

5. **What plant needs to be removed from the existing landscape?**
 - a. Buckeye
 - b. Red bud
 - c. Silver maples
 - d. Birch

6. **The perennial garden is located in what direction from the residence?**
 - a. North
 - b. South
 - c. East
 - d. West

7. What does the following symbol represent and how many are found on this landscape plan?

- a. Property Line, 2 are found on plan
- b. Sculptures, 2 are found on plan
- c. Sculptures, 3 are found on plan
- d. Proposed Shrubs, 3 are found on plan

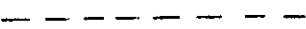



8. The plant labeled A on the plan is a

- a. Deciduous tree
- b. Proposed tree
- c. Proposed shrub
- d. Coniferous Tree

9. Which of the following plants is considered an under-story tree?

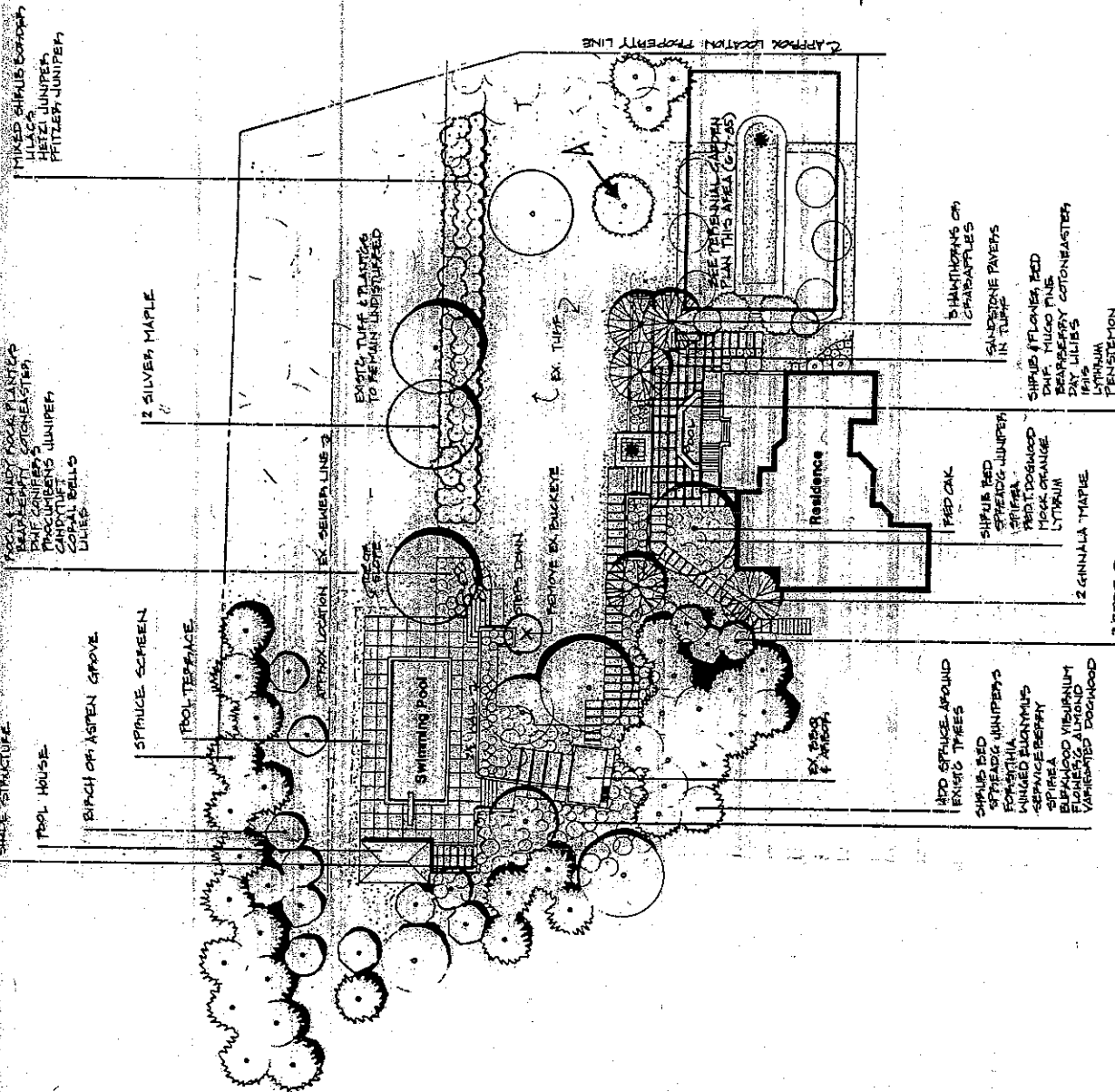
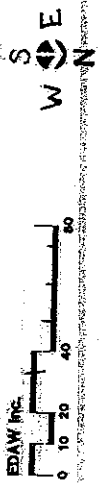
- a. Red Oak
- b. Red Bud
- c. Silver Maple
- d. Birch

10. Symbol used to represent the property line in a landscape plan

- a. 
- b. 
- c. 
- d. 

LANDSCAPE PLAN

Mr. & Mrs. William Wall Residence
 Denver, Colorado
 7/12/85



SYMBOL KEY

- * SCULPTURE
- EX TREE
- PROPOSED TREE
- CONIFEROUS TREE
- DECIDUOUS TREE
- PROPOSED SHRUBS
- ⊗ PLANT TO BE MOVED

POOL HOUSE
 BIRCH OF ASPEN GROVE
 SPRUCE SCREEN
 POOL TERRACE
 MIXED SHRUBS: BURNING BUSH, HYDRANGEA, POTTED JUNIPER

2 SILVER MAPLE

EXISTING TREES & PLANTS TO REMAIN UNCHANGED

EX TREE

CLIFFTOP LOCATION PROPERTY LINE

SEE PERENNIAL GARDEN PLAN THIS AREA (7-85)

SHRUBS OR GRASSES

SANDSTONE PAVES IN TUBS

SHRUBS: FLOWERS, RED DWF. MUGO PINE, BRASSICA, COTONEASTER, DAY LILIES

LITRUAL PENSTEMON LAMP PEARLS

RED OAK

SHRUBS: RED SPREADING JUNIPER, VERONICA, WEST DOGWOOD, YUKON CRANBERRY, LITRUAL

2 GINNALA MAPLE

3 RED BUD

100 SPRUCE AROUND LEANING TREES

SHRUBS: RED SPREADING JUNIPER, FORSYTHIA, WINGED BURNING BUSH, SPINEA, BLUEWOOD VIBURNUM, FLOWERS, ALMOND, VARIETATED DOGWOOD

EX BBS & ARBOK

SWIMMING POOL

REMOVE EX BRACKETE

REMOVE DOWN

RESIDENCE