Iowa FFA Floriculture Career Development Event
2007 Written Exam

1. Which of the following is **not** a secondary color?
    a. Green
    b. Violet
    c. Orange
    d. Yellow

2. Which of the following is the **easiest** way to achieve rhythm in a floral arrangement?
    a. Radiation
    b. Progression
    c. Repetition
    d. None of the Above

3. This color is a warm color that signifies joy and love.
    a. Orange
    b. Red
    c. Yellow
    d. Black

4. In corsages we use floral wire that is sold by gauge size. Which of the following gauge sizes would have the smallest diameter?
    a. 16 gauge
    b. 20 gauge
    c. 22 gauge
    d. 24 gauge

5. A church has a very large alter and a huge pipe organ in the front. The wedding arrangement that demonstrates appropriate scale would be:
    a. A 1-foot tall bouquet of calla lilies
    b. A single red rose in the center of the alter
    c. A 3-foot tall bouquet with a dozen gladiolus
    d. A water bowl with floating daisy blooms

6.Which holiday is the second Sunday in May?
    a. Memorial Day
    b. Mother's Day
    c. Father's Day
    d. Secretaries' Day

7. American Floral Distributors is a company that raises flowers and sells them to local floral shops. Their floral business would best be described as:
    a. Full Service Floral Shop
    b. Stem Shop
    c. Mass-Market Floral Shop
    d. Wholesale Florist

8. These types of flowers are worn by men:
    a. Corsages
    b. Boutonnieres
    c. Bud Arrangements
    d. None of the Above

9. When there are two colors in an arrangement (example: red and green), and the colors appear opposite of each other on the color wheel, the color harmony combination is known as:
    a. Complementary
    b. Monochromatic
    c. Analogous
    d. Bi-color

10. A crescent design is an example of:
    a. Symmetrical balance
    b. Semicircular balance
    c. Asymmetrical balance
    d. An unbalanced arrangement

11. Floral preservatives are added to water to maximize their water intake. They do this by:
    a. Raising the pH making the water basic
    b. Lowering the pH making the water acidic
    c. Neutralizing the water
    d. They do not generally affect water pH

12. When wiring a carnation for a corsage we typically use the:
    a. Piercing Method
    b. Stitch Method
    c. Hairpin Method
    d. Wrap Method

13. What structure on the underside of the leaf allows the leaf to breathe or transpire?
    a. Stem
    b. Pistil
    c. Stoma
    d. Chloroplasts

14. If green plants show a _____ color, this indicates a nitrogen deficiency.
    a. White
    b. Yellow
    c. Dark Green
    d. Purple

15. What are the leaves called that give poinsettias their color?
    a. Petals
    b. Bracts
    c. Breaks
    d. Sleeves

16. What is the best way to clean the leaves of an indoor plant?
    a. Wash with a diluted ammonia solution
    b. Use a professional strength household cleaner
    c. A fine spray of water
    d. A heavy shower of water

17. The average soil mixture contains what percentage of air, water, minerals and organic material?
    a. 45% air, 5% water, 25% mineral matter, 25% organic material
    b. 50% air, 15% water, 10% mineral matter, 25% organic material
    c. 5% air, 10% water, 50% mineral matter, 35% organic material
    d. 25% air, 25% water, 45% mineral matter, 5% organic material

18. About how many yards of ribbon are used to make a pinch bow?
    a. 3 yards
    b. 5 yards
    c. 7 yards
    d. 9 yards

19. Single-faced ribbon is:
    a. Dull on both sides
    b. Shiny on both sides
    c. Shiny on one side and dull on the other
    d. Is no longer used in the floral industry

20.Filler flowers include:
    a. Statice
    b. Roses
    c. Delphinium
    d. Tulips

21. The stamen is:
    a. The male part of the flower
    b. The part of the flower that produces pollen
    c. Made up of the anther and the filament
    d. All of the above

22. The vascular tissue that transports water up from the roots to the leaves is:
    a. Xylem
    b. Phloem
    c. Cambium
    d. None of the above

23. The major function of root hairs on roots is to:
    a. Grow into larger roots
    b. Absorb water and minerals from the soil
    c. Protect the root as it pushes through the soil
    d. Keep the root warm

24. A white, woolly insect that resembles a ball of cotton and is typically located at the nodes of a plant is:
    a. Aphid
    b. Whitefly
    c. Scale Insect
    d. Mealy bug

25. When a plant physically grows toward light it is demonstrating:
    a. Transpiration
    b. Phototropism
    c. Photosynthesis
    d. Condensation

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Iowa FFA Floriculture Career Development Event
2007 Team Event Phase

Name of School/Chapter _____

For this segment of the contest, you are to best utilize the talents of your team to complete the following activity within the 30-minute period.

Situation:

Your floral shop has received the following order to be processed and delivered in half an hour. You should complete the requested items along with an itemized bill for expenses. Finally, make your delivery (deliver to the customer/judge).

The customer/judge has placed an order for a retirement party. The party will honor a retiring agriculture education instructor and his wife. Please create the following:

1. A centerpiece
2. 1 corsage
3. 1 boutonniere

The customer has requested the total cost (including tax and delivery) be in the $40-$55 price range.

Retail prices: Your mark-up will be 40% of your wholesale price. The wholesale prices are posted on the white board in the room.

Sales Ticket: The sales ticket is located on the back of this order form. **This must be handed in** when delivering your order to the customer/judge.

Corsage Itemized Bill

	Quantity Used	Unit Cost	Total
Plant Materials			
Flowers			
Greens			
Other Materials			
Tape			
Wire			
Ribbon			
Corsage Pins			
Corsage Bag			
Box			
Card and Envelope			
		Total Material Cost	
		Mark Up = Two and one-half times the total material cost	
		Total Corsage Cost	

Dish Garden Itemized Bill			
	Quantity Used	**Unit Cost**	**Total**
Plant Materials			
Other Materials			
Potting Soil			
Container			
Total Cost			

Note: Mark-up is already included in the retail price of materials used.

Iowa FFA Floriculture Career Development Event
2007 Problem Solving

1. You want to purchase fertilizer for your greenhouse flowers. The store offers two products. Product ABC is sold in 50 lb bags and is labeled as a 10-10-10 mixture. The cost is $6.50 per bag. Product XYZ is sold in 25 lb bags and is labeled as a 12-16-12 mixture. The cost is $4.00 per bag. Which product has the best value per pound of active ingredient (fertilizer minus filler), and what is the actual cost per pound?
    a. Fertilizer ABC with a cost of $.22/lb
    b. Fertilizer XYZ with a cost of $.40/lb
    c. Fertilizer ABC with a cost of $.44/lb
    d. Fertilizer XYZ with a cost of $2.56/lb

2. You decided to take out a loan to open a small floral shop in your community. You borrowed enough money to cover rent, utilities, floral supplies, plant materials and advertising for one year. The cost of the loan is $45,000. In the first year of business you have $57,000 in gross sales and $44,000 in total expenses. If you have similar profits in future years of business, approximately how many years will it take to pay off your loan? (First, assume that any interest you owe on the loan is already figured into your total expenses, and second, use 100% of the net income toward loan payment.)
    a.3/4 of 1 year
    b.1 year
    c.3.5 years
    d.45 years

3. Your horticulture class has produced 1,000 geraniums in 4" square pots for a spring plant sale. Your class set the selling price at $2.00 each. How many of the plants must be sold to reach your break even price?

   Here is what you know:

   - Each pot holds 62 in^3 of potting soil.
   - A bag of soil contains 17,280 in^3 of potting soil and sells for $22.00.
   - The actual pot cost is $.06 each.
   - The geranium cuttings were $.73 each.

   a. 406 plants
   b. 435 plants
   c. 770 plants
   d. 870 plants

4. Below is a copy of an invoice you received for plant cuttings. Which of the four species was cheapest on a per plant basis?
   a.Fuchsia
   b.Begonia
   c.Dracena Spikes
   d.Ivy Geranium

Invoice 907332

Dusty Miller Nursery and Greenhouse
329 Vinca Lane
Salvia, IA 54311

Bill To:
Aster FFA Chapter
225 Fuchsia Drive
Aster, IA 57886
Attn: FFA Advisor

Ship To:
Aster FFA Chapter
225 Fuchsia Drive
Aster, IA 57886
Attn: Greenhouse Manager

Delivery Date: February 2, 2007

Quantity	Description	Unit Price	Total Price
3 Flats	Fuchsia – Pink (96/flat)	$26.75	$80.25
4 Flats	Begonia – Red (58/flat)	$23.25	$93.00
3 Flats	Dracena Spikes (92/flat)	$27.50	$82.50
2 Flats	Ivy Geranium – White (72/flat)	$52.00	$104.00

5. You need 9500 6” pot stakes for your greenhouse operation. You need to request a purchase order from the school office. Using the charts found in the order catalog, determine your expense to obtain the needed 9500 stakes. Do not forget tax and shipping. Tax for the product should be calculated at 6%.

   a. $463.09
   b. $521.40
   c. $547.89
   d. $603.35

Polystyrene Pot Stakes					
Item	Sz.	Pkg	1-4	5-9	10+
PS4	4”	1000	$46.49	$43.49	$41.99
PS6	6”	1000	$59.99	$57.99	$49.99
PS8	8”	500	$39.99	$37.99	$36.49

Shipping and Handling	
Total Product Value Before Tax	Shipping/Handling Cost
$0-250	$10.00
$250-$500	$18.00
$500+	$25.00

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2007 Problem Solving KEY

1. You want to purchase fertilizer for your greenhouse flowers. The store offers two products. Product ABC is sold in 50 lb bags and is labeled as a 10-10-10 mixture. The cost is $6.50 per bag. Product XYZ is sold in 25 lb bags and is labeled as a 12-16-12 mixture. The cost is $4.00 per bag. Which product has the best value per pound of active ingredient (fertilizer minus filler), and what is the actual cost per pound?
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   b. Fertilizer XYZ with a cost of $.40/lb
   c. Fertilizer ABC with a cost of $.44/lb
   d. Fertilizer XYZ with a cost of $2.56/lb

Step 1: Determine the percent active ingredient in each bag.

Product ABC is labeled as 10-10-10 meaning there is 10%N, 10%P, and 10%K in the bag. The total fertilizer is thus 10%+10%+10% for a total of 30% active ingredient.

Product XYZ is labeled as 12-16-12 meaning there is 12%N, 16%P, and 12%K in the bag. The total fertilizer is thus 12%+16%+12% for a total of 40% active ingredient.

Step 2: Determine the pounds of active ingredient in each bag.

Product ABC has 30% active ingredient. The bag contains 50lbs total. 50x.30 = 15lbs active ingredient.

Product XYZ has 40% active ingredient. The bag contains 25lbs total. 25x.40 = 10lbs active ingredient.

Step 3: Determine the cost per pound of active ingredient.

Product ABC cost $6.50 and there is 15 lbs of active ingredient. Cost per pound is written as $6.50/15. Then solve. The value is $.43 per pound.

Product XYZ cost $4.00 and there is 10 lbs of active ingredient. Cost per pound is written as $4.00/10. Then solve. The value is $.40 per pound.

2. You decided to take out a loan to open a small floral shop in your community. You borrowed enough money to cover rent, utilities, floral supplies, plant materials and advertising for one year. The cost of the loan is $45,000. In the first year of business you have $57,000 in gross sales and $44,000 in total expenses. If you have similar profits in future years of business, approximately how many years will it take to pay off your loan? (First, assume that any interest you owe on the loan is already figured into your total expenses, and second, use 100% of the net income toward loan payment.)
   a.3/4 of 1 year
   b.1 year
   c.3.5 years
   d.45 years

Step 1: Determine your net income (profit) for the year.
$57,000-$44,000 = $13,000

Step 2: Determine how many years it will take to earn $45,000 if you earn $13,000 a year.
$45,000/$13,000 = 3.46 years

3. Your horticulture class has produced 1,000 geraniums in 4" square pots for a spring plant sale. Your class set the selling price at $2.00 each. How many of the plants must be sold to reach your break even price?

   Here is what you know:
   - Each pot holds 62 in^3 of potting soil.
   - A bag of soil contains 17,280 in^3 of potting soil and sells for $22.00.
   - The actual pot cost is $.06 each.
   - The geranium cuttings were $.73 each.

   a. 406 plants
   b. 435 plants
   c. 770 plants
   d. 870 plants

Step 1: Determine how many pots one bag of soil will fill.
17,280/62 = 279
Step 2: Determine the value of the soil in each pot.
$22.00/279 pots = $.08
Step 3: Sum the cost to determine the expense per plant produced.
Soil $.08 + Pot $.06 + Cutting $.73 = $.87 per plant
Step 4: Determine the cost to produce 1000 plants. (Break Even Price)
$.87 x 1000 = $870.00
Step 5: Determine the number of plants to sell at $2.00 each to have an income of $870.00.
870/2=435 plants

4. Below is a copy of an invoice you received for plant cuttings. Which of the four species was cheapest on a per plant basis?
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2 Flats	Ivy Geranium – White (72/flat)	$52.00	$104.00

Step 1: Determine the value of each species by dividing the unit price by the number of plants in a unit (flat).

Fuchsia - $26.75/96 = $.28
Begonia - $23.25/58 = $.40
Spikes - $27.50/92 = $.30
Geranium - $52.00/72 = $.72

5. You need 9500 6” pot stakes for your greenhouse operation. You need to request a purchase order from the school office. Using the charts found in the order catalog, determine your expense to obtain the needed 9500 stakes. Do not forget tax and shipping. Tax for the product should be calculated at 6%.

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Total Product Value Before Tax	Shipping/Handling Cost
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$250-$500	$18.00
$500+	$25.00

Step 1: Determine the cost per case by looking on the chart.
You will need to buy 10 cases to get 9,500 stakes. Thus, look in the 10+ column under 6” pots. Cost is $49.99 per case.

Step 2: Determine the total cost of pots.
Ten cases at $49.99 per case is $499.90. (49.99x10)

Step 3: Determine shipping cost.
Cost of the pots is $499.90, so look at the row for $250-$500. Shipping is $18.00.

Step 4. Determine your tax. (Note that shipping is not taxed, although the shipping charge is calculated prior to tax.)
$499.90 x .06 = $30.00

Step 5. Add your product cost, shipping, and tax to get the final bill.
$499.90 + $18.00 + $30.00 = $547.90