2016 National Floriculture CDE

Problem Solving
Answer Key

Problem #1

Answer: A

Answer problem 1: Reading the information tells you that the Freedom variety are more sensitive and should be treated at the lowest recommended rate. The lowest rate is 2.5 ppm. Using the rate conversion chart one mixes .6 ounces of Sumagic per gallon. In a 1 and ½ gallon sprayer you would mix .9 ounces.

Problem #2

Answer: B

Desired concentration in ppm – 200

Injector ratio = 1:50; dilution factor = 50

Fertilizer analysis 20-10-20 = 20% N

Constant in ounces = 75

$\frac{200\text{ppm} \times 50}{20\text{ N} \times 75} = \frac{10,000}{1,500} = 6.67$ / round up to 7 ounces of 20-10-20 fertilizer should be mixed with 1 gallon of water

Reference: Page 271, Introduction to Horticulture, 4th Edition

Problem #3

Answer: A

Correct Answer is $98 (you have to buy a case of leather leaf and vases)

Roses $20

Lilies $15.00

Liatris $5.00

Leather Leaf $25.00

Wax Flower $8.00

Case of vases $25.00

Problem #4

Answer: B

Calculate heater needed: 90x30x15=40,500

40,500x0.133x(50-10)= 215,460 BTUs which would require

Modine Power-Vented Natural Gas Heater   Max Output 240K
BTU Heater $1,629.00 /EA
$1,629.00 x .15 Shipping = $244.35

$1,629.00 x .07 Tax = $114.03 $1,629 + $244.35 + $144.03 = $1,987.38

Reference – Pages 123-132, Ball Red Book, Volume 1, 17th Edition

Problem #5:

Answer: A

1. Find the table for 'Incorporation Rates' in the left-hand column of the Osmocote label. It indicates that the 'low' rate of incorporation is 3.5 lb per cubic yard.
2. The table on the right shows that about 100 - 12-in hanging baskets of 2.25 gal each can be filled per cubic yard of root medium. This could also be calculated as follows:
   100 baskets x 2.2 gal/basket = 220 gal x 1 cubic yard / 202 gal = 1 cubic yard of root medium needed.
3. Therefore, 3.5 lb Osmocote 14-14-14 should be mixed into one cubic yard of root medium prior to potting, [OR 3.85 lb Osmocote 14-14-14 should be mixed into 1.1 cubic yard of root medium, but this is not an answer choice]

Problem #6

Answer: D

Peace Lily 10"   Croton 10"

Plant cost $15.00   Plant cost $11.00

Basket cost $4.00   basket cost $4.00

Total cost $19.00 X 2.5 =$47.50   total cost $15.00 X 2.5 = $37.50

20% labor $9.50   20% labor $7.50

       Retail Price $57.00   Retail Price $45.00

Problem #7

Answer: D

A. Cyclamen plugs should be given light similar to natural day length, with a lowered moisture level of 5-4 and ~~temperatures should be lowered to 54-57° F.~~

B. ~~Cyclamen plugs should be kept in the total darkness for the first ten days of Stage 2 production~~ then given natural day length. They should also have fleece covering and pH should be maintained at around 6.0.

C. ~~Cyclamen plugs should be not be covered~~ and given light similar to natural day length during Stage 2 production. Plants should also be kept at 100% humidity.

D. Cyclamen plugs should be kept at 100% humidity with fleece covering on the trays. Moisture levels need to be maintained between 4 and 5. Also, plants in Stage 2 production should be given light similar to natural day length.

Reference - Chapter 15 – Cyclamen, Introduction to Floriculture, Second Edition

Problem # 8

Answer: C

1. Convert square feet of production space into square yards: 3,175 square feet / 9 square feet (per yard) = 353 square yards.
2. Determine the number of sachets that should be set out per square yard. For the 'curative light' rate, 2 sachets per square yard should be used.
3. Determine the number of sachets to order. 353 square yards x 2 sachets per square yard = 700 sachets to order.

Problem # 9

Answer: D

Using the product find Easy Wave Petunias. Total crop time is 10-12 weeks. The target market date is April 15th. January 27th is 11 weeks before target date. That becomes the sow date. Transplant in 5-6 weeks (March 3rd to 10th). PGR is to be applied 7 days after transplant which is March 17th if transplant date is March 10th. Based on this information then D is the correct answer.

Problem #10

Answer: C

1. Determine the number of usable plugs needed. 8 x 4 (from 0804) = 32 plugs per flat x 125 flats = 4,000 usable plugs needed.
2. Determine the number of plug trays needed to provide 4,000 usable seedlings. 4,000 usable plugs needed / 280 plugs per 288 plug tray = 14.3 plug trays; must order 15 plug trays to meet order.