Greenhouse Crop Production Career Development Event
Test Bank

1. Which of the following is not an example of a photoperiodic plant?
   a. Poinsettia
   b. Columbine
   c. Mum
   d. Azalea
   e. Kalanchoes
2. Alkalinity with regard to water quality is defined as the concentration of:
   a. Carbon dioxide (CO2) and Oxygen (O)
   b. Bicarbonates (HCO^3) & carbonates (CO^3)
   c. Carbonates (CO^3) & Nitrogen (N)
   d. Acid & soluble salts
   e. Bicarbonate (HCO^3) & Oxygen (O)
3. What levels of PH are considered to be Acidic?
   a. 14-10
   b. 1-8
   c. 1-6
   d. 7-14
   e. None of the above
4. Which of the following is not a major factor of water quality?
   a. PH
   b. Soluble salt level
   c. Alkality
   d. Hardness
   e. Temperature
5. Name the three mineral particles found in soil
   a. Loam, sand, perlite
   b. Sand, silt, clay
   c. Perlite, cement, sand
   d. Silt, clay, loam
   e. Rocks, vermiculite, perlite
6. Which of the following are not examples of organic ingredients?
   a. Vermiculite
   b. Sphagnum peat moss
   c. Composted bark
   d. Composted yard waste
   e. All of the above
7. Soil structure refers to:
   a. The amount of pore spaces
   b. The portions of sand, silt & Clay
   c. The way the soil particles are arranged in clumps
   d. The water holding capacity of the soil
   e. The biochemical reactions occurring in the soil

8. Magnesium deficiency symptoms are?
    a. Stunting of the plant
    b. Interveinal chlorosis in lower leaves first
    c. Death of growing point
    d. Leaf margins turn brown
    e. Purplish cast occurs
9. Which of the following is not a macronutrient?
    a. Nitrogen
    b. Oxygen
    c. Phosphorus
    d. Iron
10. If there is a purplish cast on your leaves, what nutrient might be deficient?
    a. Nitrogen
    b. Phosphorus
    c. Potassium
    d. Calcium
11. Which macronutrient, when used in large amounts, will inhibit flowering & fruiting?
    a. Manganese
    b. Calcium
    c. Phosphorus
    d. Nitrogen
    e. Iron
12. Which of the following is <u>NOT</u> a macroelement required for plant growth?
    a. Calcium
    b. Carbon
    c. Molybdenum
    d. Nitrogen
    e. Potassium
13. To aid in moisture retention, ____ matter is added to the soil because it holds many times its own weight in water.
    a. Ash
    b. Organic
    c. Mulch
    d. Nitrogen
14. If a plant is allowed to reach the extreme wilting stage, ____ occurs.
    a. Death
    b. Aging
    c. Injury
    d. Yellowing
15. If green plants show a ____ color, this indicates a nitrogen deficiency.
    a. Yellow
    b. Purple
    c. White
    d. Dark Green

16. What percentage of a plant's weight does water make up?
    a. 25%
    b. 90%
    c. 10%
    d. 50%
17. What does photoperiodic mean?
    a. A picture of the plant
    b. Growing towards the light
    c. Requiring light 24 hours a day
    d. Length of time in light and dark experienced by plant
    e. A plant that flowers in darkness
18. Water loss to the atmosphere from the leaves occurs primarily through
    a. Stomates
    b. Vacuoles
    c. Petiols
    d. Xylem
19. The first part of the embryo to emerge when a seed germinates is the:
    a. Plumule
    b. Hypocotyl
    c. Radicle
    d. Cotyledons
20. What factors should be considered in selecting a suitable greenhouse location?
    a. Land area
    b. Wind breaks
    c. Zoning permit
    d. Market accessibility
    e. All of the above
21. Why must polyethylene film be replaced every three to four years?
    a. Heat retention will increase over time
    b. Light transmission will decrease over time, become cloudy
    c. Durability is low, will become weak with age
    d. None of the above
22. A head house is used for:
    a. Planting, growing and loading plants
    b. Planting, mixing soil and watering plants
    c. Planting, mixing soil and loading plants
    d. Mixing soil, growing and watering plants
    e. Mixing soil, cold storage and growing plants
23. All of the following factors should be considered when selecting a suitable greenhouse location, EXCEPT:
    a. Zoning permit
    b. Topography
    c. Structure of the greenhouse
    d. Water supply & quality
    e. Labor Availability

24. What are 3 ways that heat is lost from a greenhouse?
    a. Conduction
    b. Air leakage
    c. Radiation
    d. Leaving door open
    e. A, B, and C
25. What is the purpose of applying white wash to the glazing of a greenhouse
    a. Keep warmer
    b. Reflect sunlight
    c. Make pretty
    d. So no one can see in
    e. All of the above
26. Heat loss by air leakage is mostly:
    a. Loss by an open door
    b. Direct loss by radiation
    c. Air leakage through opening in greenhouse frame
    d. Loss by conduction
    e. All of the above
27. This type of benching allows for a system for transporting the benches of finished plants from greenhouse to the headhouse.
    a. Retail
    b. Standard
    c. Peninsular
    d. Rolling
    e. Double-tiered
28. When is supplemental lighting needed in greenhouses?
    a. During the summer
    b. When there is high intensity light
    c. During the winter
    d. When the sun is out
    e. None of the above
29. Which of the following is NOT a common benching arrangement?
    a. Peninsular
    b. Retail
    c. Standard
    d. Rolling
    e. Wire Mesh
30. Greenhouse computers Monitor all of the following environmental factors EXCEPT:
    a. Light intensity
    b. Insect concentration
    c. CO2 concentration
    d. Relative humidity
    e. Soil moisture levels

31. Name the most efficient method of heating a greenhouse
    a. Stream
    b. Hot water
    c. Hot air
    d. Solar
    e. Infrared
32. During cool, clear winter nights, heat is lost most through what part of the greenhouse?
    a. Doors
    b. Roof
    c. Sides
    d. Floor
    e. Vent systems
33. What is meant by DIF?
    a. The mathematical difference between the day temperature and the night temperature.
    b. The mathematical difference in fertilizer application rates
    c. The difference in pH range
    d. The different requirements of greenhouse plants
    e. The difference growing requirements for bulb, corm, and seed plants
34. The term used to describe a temperature requirement that produces a plant response is
    a. Photoperiodism
    b. Thermoperiodism
    c. Light intensity
    d. Phototropism
    e. Etiolation
35. Which of the following is not a function of root media?
    a. To serve as a source of nutrients
    b. To supply a source of water
    c. To supply carbohydrates
    d. To provide adequate aeration and drainage
    e. To support the plant in its container
36. What is the instrument called that is used to measure soluble salts in the root medium?
    a. Hozon
    b. Constant feed injector
    c. Stock tank tester
    d. Solubridge
    e. Single element probe
37. If a fertilizer bag is labeled 10-15-10, what nutrient does the 15 represent?
    a. Nitrogen
    b. Phosphorus
    c. Potassium
    d. Calcium

38. How many pounds of nitrogen are in a fertilizer with analysis of 15-20-10?
    a. 10
    b. 15
    c. 20
    d. 30
    e. 40
39. What is added to acidic soil to raise the pH?
    a. Fertilizer
    b. Lime
    c. Sand
    d. Organic Matter
40. What percent of cut flowers sold in the US are imported?
    a. 65
    b. 50
    c. 85
    d. 20
    e. 30
41. Which of the following answers are not part of the major factors relating to the cost of operation of a greenhouse?
    a. Direct Material Costs
    b. Direct Labor Costs
    c. Overhead costs
    d. Marketing Costs
    e. Education Costs
42. The major cost in the greenhouse bedding plant industry comes from:
    a. Variable or direct costs
    b. Labor Costs
    c. Overhead or fixed costs
    d. Marketing costs
    e. All of these are the same
43. Whose job is to plan and supervise the growing of crops?
    a. Greenhouse manager
    b. Production manager
    c. Marketing manager
    d. Section foreman
    e. Grower
44. At what temperature should soil for seed germination be sterilized by heating for one-half hour?
    a. 212 degrees F
    b. 180 degrees F
    c. 100 degrees F
    d. 300 degrees F

45. _____seeding is when seeds are sown in a separate place from where the plants will eventually grow to maturity
    a. Sideways
    b. Indirect
    c. Top
    d. Direct
46. What is the first stage of growth called after a cutting starts to grow?
    a. softwood formation
    b. stem formation
    c. scab formation
    d. callus formation
47. At what percentage should the humidity be kept for new cuttings?
    a. close to 100 percent
    b. close to 50 percent
    c. close to 25 percent
    d. close to 10 percent
48. _____formation occurs during the storage period of cuttings.
    a. Tip
    b. Callus
    c. Leaf
    d. Stem
49. The ____ or scaly bulb has no tough outer covering.
    a. Tunicate
    b. Nontunicate
    c. Bulbets
    d. Laminate
50. When can bulbs be separated?
    a. during the alert stage
    b. during the scaly stage
    c. during the crown stage
    d. during the dormant stage
51. Tubers are distinguished by their ____.
    a. Crowns
    b. Leaves
    c. Eyes
    d. Stems
52. When grafting, what is the name of the newly installed shoot or top of the plant?
    a. Tissue
    b. Rootstock
    c. Corm
    d. Scion

53. In order to have a successful graft, the two plants must be ____.
    a. Friends
    b. Related
    c. Neighbors
    d. Exactly the same size
54. Side veneer grafting in evergreens is used to produce the right ____.
    a. Color
    b. Size
    c. Wood type
    d. Stems
55. Which type of bud is necessary for propagation?
    a. Vegetative
    b. Big
    c. Fruit
    d. Small
56. How soon after a T-budding should an inspection be made to see if the bud has taken?
    a. Three days
    b. One week
    c. Three weeks
    d. Eight weeks
57. The process of budding is actually a form of ____.
    a. Seeding
    b. Grafting
    c. Nursing
    d. Chipping
58. Layering is a method of ____.
    a. Stacking seeds
    b. Asexual reproduction
    c. Budding
    d. Producing vegetables
59. Identify the form of asexual reproduction that eliminates burying part of the parent plant in the soil.
    a. seed strings
    b. upright layering
    c. girdle layering
    d. air layering
60. Identify the moist substance wrapped around a girdled area.
    a. Sphagnum moss
    b. Electrician's tape
    c. Wax
    d. Cambium

61. What is D.I.F?
    a. When daytime temp is higher than night temp
    b. When evening temp is higher than the day temp
    c. Difference between day temp and outdoor temp
    d. Mathematical dfference between day temp and night temp
    e. Difference between night temp and outdoor temp
62. What is the definition of D.I.F?
    a. Deficiency interval factor
    b. The mathematical difference between light hours and dark hours
    c. The mathematical difference between dry and moist
    d. The mathematical difference between day temp and night temp
    e. The difference in plant height
63. What is the application of D.I.F?
    a. To produce more flowers
    b. To control crop height
    c. To prolong flowering
    d. To produce smaller fruit
    e. To control timing
64. Terminal or stem tip cuttings are prepared from:
    a. A second year tissue
    b. New growth
    c. The bases of stems
    d. Any part of the plant
65. What structure on the underside of the leaf allows the leaf to breathe or transpire?
    a. Pistil
    b. Stem
    c. Stoma
    d. Chloroplasts
66. Which part of the root absorbs the moisture and minerals?
    a. Medium Roots
    b. Root Roots
    c. Root Canal
    d. Root Hairs
67. Which of the following is not an advantage of producing bedding plants in plug trays?
    a. Seeding machines can plant them quickly
    b. They require a large investment
    c. There is no transplant stock
    d. Transplanting is faster
    e. Reduced labor costs
68. What color is the true color of the poinsettia?
    a. Red
    b. Yellow
    c. Pink
    d. White

69. What type of temperatures do carnations require?
    a. Extremely warm
    b. Temperature
    c. Cool
    d. Humid
70. What type of light produces the best cut flowers?
    a. Low light
    b. Shade
    c. Indirect light
    d. Full Sun
    e. Very intense
71. Cut Carnations are classified into which two groups?
    a. Standards
    b. Medium
    c. Miniatures
    d. Large
    e. Small
72. What is the desired system for watering cut flowers?
    a. Overhead sprinkler
    b. Mist system
    c. Ooze tubes and perimeter irrigation
    d. House with water breaker
73. The three types of pots used in greenhouses are:
    a. Clay, metal, standard
    b. Bulb, geranium, gallon
    c. 2 gallon, azalea, geranium
    d. Standard, azalea, bulb
74. Plastic pots are commonly used today due the many advantages they offer. Which of the following is <u>NOT</u> an advantage?
    a. Plastic pots are not porous
    b. Overwatering can easily occur
    c. Posts are available in many sizes and colors
    d. Plastic plots are light weight
    e. The outside of the plastic pot remains cleaner
75. Which of the following is NOT a watering system for cut flowers?
    a. Ooze tube
    b. Echo
    c. Perimeter
    d. Capillary mat
    e. Ebb and Flood

76. Ebb and flood irrigation systems offer the following advantages EXCEPT for:
    a. Uniform watering of the crop
    b. No runoff of fertilizer water
    c. Greatly reduces labor costs
    d. Pollution of potable groundwater
    e. Efficient use of water
77. Cold frames are used in greenhouse operations in spring primarily to:
    a. Harden off bedding plants
    b. Produce cut flower crops
    c. Winter over bulb stock
    d. Start seedlings
78. Two short-season crops that may be use in successive plantings are:
    a. Radishes and lettuce
    b. Beets and horseradish
    c. Tomatoes and corn
    d. Peppers and turnips
79. Which vegetable crops need large amounts of nitrogen fertilizer?
    a. Leaf
    b. Fruit
    c. Root
    d. All of the these
80. Which vegetable crops need large amounts of potash fertilizer?
    a. Pod
    b. Leaf
    c. Fruit
    d. Root
81. A tomato that has a limited height growth and is normally used in pots is considered to be a?
    a. Legume
    b. Indeterminate
    c. Determinate
    d. Cool weather crop
82. Taken as a whole, the recommended pH range for soil less greenhouse medium is:
    a. 5.8 to 6.4
    b. 5.5 to 6.5
    c. 5.0 to 6.0
    d. 6.2 to 7.4
    e. None of the above
83. IPM addresses all the following EXCEPT:
    a. Biological control
    b. Pesticides
    c. Physical control
    d. Poisoning

84. Beneficial insects leaving your greenhouse is referred to as:
    a. Rolling
    b. Escaping
    c. Termination
    d. Wiping out
85. Using sticky traps to control whiteflies is a form of:
    a. Greenhouse sanitation
    b. Chemical pest control
    c. Physical pest control
    d. Biological pest control
86. Instead of relying almost entirely on chemical pesticides, greenhouse growers today use a combination of methods to prevent and/or control pests safely and effectively. This method is called:
    a. Identify, press, measure
    b. Integrated pest management
    c. Initial progressive management
    d. Interval poly measurement
87. Some plants secrete chemicals that ____.
    a. stimulate roots
    b. inhibit root growth
    c. decay roots
    d. increase root growth
88. Chemicals inhaled are absorbed through the ____.
    a. liver
    b. heart
    c. kidneys
    d. lungs
89. The three body regions of an insect are the ____.
    a. head, legs, thorax
    b. head, thorax, abdomen
    c. legs, head, abdomen
    d. legs, thorax, abdomen
90. The ____ already use biological control methods and may be able to teach us more about them.
    a. Chinese
    b. Japanese
    c. Koreans
    d. English
91. Identify the type of chemical used to control rats and mice.
    a. fungicide
    b. pesticide
    c. nematocide
    d. rodenticide

92. For the accurate application of herbicides, a sprayer should be properly ____.
    a. cleaned
    b. calibrated
    c. trimmed
    d. all of the above
93. A nonpolluting control for insect eggs is ____.
    a. fumigants
    b. aerial chemicals
    c. spray oil
    d. chemical powder
94. Unsatisfactory weed control may result from use of the wrong ____.
    a. herbicide
    b. fumigant
    c. repellent
    d. toxicity
95. Herbicides work by upsetting the plant's ____.
    a. metabolism
    b. mineral supply
    c, weed potential
    d. final size
96. Identify an effective natural pesticide that is environmentally safe.
    a. Atrazine
    b. Furadan
    c. Round-up
    d. Azadirachtin
97. Soils that have high clay content have:
    a. low permeability/low water holding capacity
    b. low permeability/high water holding capacity
    c. high permeability/low water holding capacity
    d. high permeability/high water holding capacity
98. The principle tissue involved in moving nutrients throughout to all parts of a plant, according to where nutrients are needed is:
    a. cortex
    b. phloem
    c. xylem
    d. epidermis
99. You are using a soilless media mixture to transplant seedlings that require a neutral pH. Which of the following would be an acceptable pH range?
    a. 4.8 – 5.2
    b. 5.8 – 6.2
    c. 6.8 – 7.2
    d. 7.8 – 8.2

100. Monitoring to detect the pest problem is done by regular ____.
    a. liquid applications
    b. inspection of plants
    c. plant fumigation
    d. dusting of plants
101. Chronic toxicity is a danger caused by chemicals that accumulate in ____.
    a. 50 gallon drums
    b. building floors and walls
    c. bodies of animals
    d. fallen trees
102. What insect is typically plump green or brown and feeds on various plant parts including stems & flower buds?
    a. Aphids
    b. Thrips
    c. Spider Mites
    d. White flies
    e. Scale
103. What articles of clothing should you wear when apply pesticides?
    a. Gloves
    b. Rubber Boots
    c. Respirator Mask
    d. Goggles
    e. All of the above
104. What pests primarily affect poinsettias?
    a. Aphids
    b. Thrips
    c. White flies
    d. Black fly
    e. Slugs
105. Lady bugs are most often used to control?
    a. Fungus gnats
    b. Aphids
    c. Rust
    d. Root worms
106. Which is a physical method of pest control?
    a. Spraying
    b. Using insect predators
    c. Installing barriers on greenhouse doors
    d. Using sticky boards
107. A cutting that includes a small portion of the leaf attached?
    a. Root cutting
    b. Stem cutting
    c. Leaf cutting
    d. Leaf bud cutting

108. Plant reproduction method using a very small plant part and a sterile medium?
    a. stem cutting
    b. autoclense
    c. root cutting
    d. tissue culture
109. Implanting a branch or bud of one plant into another
    a. Cloning
    b. Grafting
    c. Cutting
    d. Layering
110. Propagation method in which roots form on the stem of the plant while it is still attached to the parent plant.
    a. Air layering
    b. Cloning
    c. Grafting
    d. Cutting
111. A stock plant is one in which cuttings or meristems are obtained for propagation,
    a. True
    b. False
112. This is an example of a short swollen underground stem
    a. Bulb
    b. Corm
    c. Rhizome
    d. Tuber
113. This type of plant is unaffected by day length.
    a. Long day
    b. Short day
    c. Day neutral
    d. Day positive
114. This plant flowers when the day is long.
    a. Long day
    b. Short day
    c. Day neutral
    d. Day positive
115. This plant flowers when day length is shortest.
    a. Long day
    b. Short day
    c. Day neutral
    d. Day positive
116. A poinsettia is a long day plant.
    a. True
    b. False

117. This is the process of getting a bulb to grow and produce flowers
    a. Manipulation
    b. Propagation
    c. Forcing
    d. Budding
118. This is the process of removing the apical meristem to produce a bushy well branched plant.
    a. Pinching
    b. Forcing
    c. Budding
    d. Bushing
119. This is an underground stem that does not have a dry leaf covering.
    a. Corm
    b. Rhizome
    c. Bulb
    d. Tuber
120. This type of fertilizer contains all the primary nutrients
    a. Complete fertilizer
    b. Primary fertilizer
    c. Essential fertilizer
    d. Incomplete fertilizer
121. Heat treated mica that is light weight with water and nutrient holding capabilities
    a. Perlite
    b. Moss
    c. Sand
    d. Vermiculite
122. Heat treated lava rock that is light weight and has low nutrient and low water holding capabilities
    a. Perlite
    b. Moss
    c. Sand
    d. Vermiculite
123. A soilless media will contain all of the following except
    a. Perlite
    b. Moss
    c. Sand
    d. Vermiculite
124. The practice of raising, harvesting and storing vegetables
    a. Pomology
    b. Olericulture
    c. Horticulture
    d. Floriculture
125. The practice of growing, raising, harvesting and storing tree fruits
    a. Pomology
    b. Olericulture
    c. Horticulture
    d. Floriculture

126. A fungal disease that causes the plant to rot off at the soil line
    a. Root rot
    b. Mildew
    c. Damping off
    d. Botrytis
127. A fast growing pathogenic fungus that is also known as gray mold
    a. Root rot
    b. Mildew
    c. Damping off
    d. Botrytis
128. This type of plant is non-woody and dies back to the soil every year
    a. Woody
    b. Tree
    c. Herbaceous
    d. Cultivar
129. A group of plants with distinguishing characteristics from other plants in a species; but does not transfer those traits to offspring through sexual propagation.
    a. Species
    b. Variety
    c. Cultivar
    d. Descendent
130. Cultivated plants within a species that show a significant difference from other plants of a species
    a. Species
    b. Variety
    c. Cultivar
    d. Descendent
131. Lime furnishes the plant food element
    a. Nitrogen
    b. Phosphorus
    c. Potash
    d. Calcium
132. Potassium causes plants to
    a. produce more flowers and seeds.
    b. resist disease and develop strong roots.
    c. grow much larger than they would otherwise.
    d. grow rapidly and develop a dark green color.
133. Nitrogen causes plants to
    a. produce more flowers and seeds.
    b. resist disease and develop strong roots.
    c. harden off more rapidly.
    d. grow rapidly and develop a dark green color.

134. Phosphorus causes plants to
    a. produce more flowers and seeds.
    b. resist disease and develop strong roots.
    c. mature more rapidly.
    d. all of the above
135. One rooting hormone occurring naturally in plants is
    a. indoleacetic acid.
    b. indolebutyric acid.
    c. naphthaleneacetic acid.
    d. talc.
136. Which two of the following materials are mixed in the seeding medium to give good drainage and aeration?
    a. peat moss and vermiculite
    b. sand and sphagnum moss
    c. sand and perlite
    d. perlite and peat moss
137. In grafting, great care must be used to match which layer of the scion and rootstock?
    a. woody
    b. cambium
    c. bark
    d. outside
138. What do poinsettias require for flower production?
    a. a long day
    b. a short day
    c. no light at all
    d. none of these
139. Pinching poinsettias is a process of removing
    a. flower buds.
    b. bracts.
    c. terminal ends.
    d. none of these
140. Pesticides applied to soil in which poinsettias are grown are
    a. sprayed.
    b. drenched.
    c. wettable powders.
    d. none of these
141. Precooled lily bulbs received around the first of December
    a. take about 120 days to flower after planting.
    b. are usually not yet mature.
    c. need cold storage treatment before they will flower.
    d. all of the above

142. Allelopathy 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 to one another.
    d. plants grow toward sunlight
143. Monocot stems have the xylem and phloem
    a. on each side of a cambium layer.
    b. in small bundles scattered through the stem.
    c. side by side.
    d. near the outside of the stem.
144. The xylem, or wood, of a stem
    a. conducts manufactured food down to the roots.
    b. stores food.
    c. is green in color.
    d. conducts water and minerals up to the leaves.
145. The green color of leaves is caused by tiny particles in the food-producing cells called
    a. guard cells.
    b. epidermis.
    c. chloroplasts.
    d. starch.
146. The stamen is
    a. the male part of the flower.
    a. the part of the flower that produces pollen.
    c. the part of the flower that holds the anther.
    d. all of the above
147. The pistil is
    a. the female part of the flower.
    b. the male part of the flower.
    c. the showy part of the flower.
    d. the pollen-producing part of the flower.
148. Water loss to the atmosphere from the leaves occurs primarily through
    a. stomates
    b. vacuoles
    c. petiols
    d. xylem
149. A perfect flower has:
    a. both stamens and pistils
    b. both petals and sepals
    c. only petals
    d. only stamens
150. A rhizome is:
    a. a short, compressed, underground stem
    b. an elongated horizontal stem, usually lying on the soil surface
    c. a slender stem running below the soil surface, with elongated internodes

151. Acidic soils can be neutralized via the addition of:
    a. water
    b. elemental sulfur
    c. ammonium sulfate
    d. dolomitic lime
152. Knowing the mouthparts of different insects can help you determine which insect has been feeding on your plants. Which of the following insect groups has piercing mouthparts?
    a. white flies
    b. thrips
    c. aphids
    d. fungus gnats