



2017 National FFA Floriculture  
Career Development Event  
General Knowledge Exam



**Directions:** Select the best answer for each question and mark your selection on the separate scantron sheet provided. *Mark answers in the General Knowledge Exam section on the scantron located in the left side of the scantron.*

1. The following is not a characteristic of an insect:
  - A. Three segmented body
  - B. Six legs
  - C. Two pairs of wings
  - D. Two tentacles
  
2. The following is not used to measure greenhouse crop nutrient levels:
  - A. Soil tests
  - B. Soluble salts meter
  - C. Foliar analysis
  - D. Tensiometer
  
3. Light intensity can be measured in units of:
  - A. Nanometers
  - B. Micrometers
  - C. Foot-candles
  - D. Newtons
  
4. A \_\_\_\_\_ results from crossing parents of different genotype for a trait.
  - A. clone
  - B. scion
  - C. species
  - D. hybrid
  
5. The \_\_\_\_\_ transports water and nutrients from the roots to other parts of the plant.
  - A. phloem
  - B. xylem
  - C. pith
  - D. cambium
  
6. *Crassula argentea* is the botanical name for Jade Plant. *Crassula* is the \_\_\_\_\_ of the plant.
  - A. family
  - B. cultivar
  - C. species
  - D. genus

7. Indolebutyric acid (IBA) is commonly used to:

- A. control insects
- B. control diseases
- C. raise soil pH
- D. promote rooting of cuttings

8. Signal words on labels alert the user to the toxicity of a pesticide. Which of the following words is not used as a signal word?

- A. DANGER
- B. HAZARDOUS
- C. CAUTION
- D. WARNING

9. Which of the following flower parts is contained in the pistil?

- A. sepal
- B. receptacle
- C. anther
- D. style

10. \_\_\_\_\_ is the process of softening or breaking a seed coat in order to overcome seed dormancy.

- A. Scarification
- B. Stratification
- C. Ratification
- D. Augmentation

11. Prior to transplanting, seedlings should be \_\_\_\_\_.

- A. kept in the dark.
- B. grown at a temperature of 90°F.
- C. hardened-off
- D. allowed to dampen-off.

12. In order to lower the pH of a soil, materials containing \_\_\_\_\_ are used.

- A. dolomite
- B. lime
- C. hydrated lime
- D. sulfur

13. Which of the following nutrients would be retained more by a root medium with high cation exchange capacity (CEC)?

- A. Potassium
- B. Phosphate
- C. Nitrate
- D. Sulfate

14. Soluble salts in medium is measured by electrical conductivity (EC). An appropriate EC range for flowering potted crops using the pour through extraction method is:

- A. 0.25mS/cm to 0.75 mS/cm
- B. 0.5 mS/cm to 2.0 mS/cm
- C. 1.0 mS.cm to 4.6 mS/cm
- D. 3.0 mS.cm to 6.2 mS/cm

15. Soilless medium can be amended with which of the following materials prior to potting to provide magnesium?

- A. Epsom Salt
- B. Gypsum
- C. Micronutrients mix
- D. Triple superphosphate

16. The Worker Protection Standards (WPS) developed for agriculture pesticides was implemented by what government agency?

- A. United States Department of Agriculture
- B. Agriculture Cooperative Extension Service
- C. Department of Homeland Security
- D. Environmental Protection Agency

17. Cytokinins are responsible for cell division and differentiation in the plant. Cytokinins are produced in what plant part?

- A. Lateral shoots
- B. Roots
- C. Terminal shoots
- D. Cambium

18. Which of the following auxins is naturally produced in the plant?

- A. Indole-3-acetic acid (IAA)
- B. Naphthalene acetic acid (NAA)
- C. Indolepropionic acid (IPA)
- D. Indole-3-butyric acid (IBA)

19. Carbon is an essential plant element. Plants obtain carbon from carbon dioxide gas (CO<sub>2</sub>). Air on the average contains what percent CO<sub>2</sub>?

- A. 0.30 percent
- B. 30 percent
- C. 0.03 percent
- D. 3 percent

20. A plant's growth response to temperature is called:
- A. Vernalization
  - B. Thermotropism
  - C. Photoperiodism
  - D. Thermoperiodic
21. Which of the following is not an advantage of hydroponics?
- A. Plant nutrition is completely controlled through prepared nutrient solutions.
  - B. Yield per unit area is reduced since plants may be planted closer together.
  - C. Roots do not spread as much because H<sub>2</sub>O and nutrients are pumped directly to the plant.
  - D. The need for weed, disease, and insect control is greatly reduced due to the absence of soil.
22. Allelopathy is a plant phenomenon that does the following to plants:
- A. Prevents the formation of bacteria organisms
  - B. Stops fungus organisms from growing on plants
  - C. Creates a mechanism within the plant to induce flowering
  - D. Production of a chemical compound by one plant that slows down or stops the growth of another plant
23. Pesticides can be purchased for use in the greenhouse as a wettable powder (WP) or as an emulsifiable concentrate (EC). Which of the following is true about these two pesticide formulations.
- A. WP are diluted (dissolved) in water and can settle during application while EC are suspended in water and do not settle during application.
  - B. There is no difference in the two formulations
  - C. EC must be added to water in correct rates where WP are applied as it exist in the container
  - D. WP and EC both are purchased as dry formulations
24. Tulle in florist work is:
- A. The ribbon added to any floral piece being created
  - B. Florist netting that can add color, texture, and support for some flowers
  - C. Silk leaves used instead of fresh foliage in corsages
  - D. Other accessories used in corsages such as pearl sprays, rhinestones, butterflies, or chenille letters
25. The country that is the leading exporter of cut flowers to the United States floral industry is:
- A. Holland
  - B. Ecuador
  - C. Mexico
  - D. Columbia

26. The climatic conditions that are needed for carnations to be grown successfully as a cut flower include?

- A. Low light intensity, mild climate requiring minimal amount of protection, uniform temperature and day length
- B. High light intensity, mild climate requiring minimal amount of protection, and cold nights and hot days
- C. High light intensity, mild climate requiring minimal amount of protection, uniform temperature and day length
- D. Low light intensity, mild climate requiring minimal amount of protection, and short days

27. In growing chrysanthemums as cut flowers the plant requires which of the following conditions to maintain a vegetative state of growth?

- A. Day length at less than 9.5 hours growing at 60 degrees
- B. Day length between 11 and 12 hours growing at 80 degrees
- C. Day length at 10.5 hours growing at 60 degrees
- D. Day length greater than 14.5 hours growing at 60 degrees

28. The advantages of an ebb and flood irrigation system in the greenhouse are:

- A. Labor savings
- B. Reduced water and nutrient use
- C. Lower pesticide use
- D. All of the above

29. Which of the following is not a plant hormone that can be used as a plant growth regulator?

- A. ethylene
- B. anthocyanin
- C. abscisic acid
- D. gibberellin

30. The best root medium pH for a majority of spring bedding plants, but not including petunias or geraniums, is:

- A. 4.5 to 5.5
- B. 5.5 to 6.5
- C. 6.5 to 7.5
- D. 7.5 to 8.5

31. In grafting, such as for grafted tomato transplants,

- A. the scion is the top part of the graft and the rootstock is the lower part
- B. the rootstock is the top part of the graft and the scion is the lower part
- C. the scion often imparts disease resistance to the grafted plant
- D. the rootstock often provides desirable fruiting characteristics

32. The pistil is
- A. the female part of the flower
  - B. the male part of the flower
  - C. contains both the male and female parts of a flower
  - D. becomes seeds
33. The pH of the root medium indicates to a greenhouse grower its
- A. volumetric water content
  - B. salt ions dissolved in water
  - C. hydrogen ion concentration
  - D. organic matter content
34. On a financial planning sheet, the costs of the plant materials (i.e. purchase cost of seeds, cuttings, bulbs, or other plant propagule) would be examples of:
- A. wholesale costs
  - B. overhead costs
  - C. fixed costs
  - D. direct costs
35. A 6-inch 'azalea pot' has an inside rim diameter of   (i)   inches and a depth of   (ii)   inches.
- A. (i) 6-inches, (ii) 8 inches
  - B. (i) 6-inches, (ii) 6-inches
  - C. (i) 6-inches, (ii) 4.5-inches
  - D. (i) 6-inches, (ii) 3-inches
36. Respiration:
- A. produces sugars in the plant
  - B. occurs only during the night
  - C. releases oxygen to the atmosphere
  - D. none of the above
37. What type of environment do poinsettias require to produce red bracts?
- A. short day photoperiod
  - B. long day photoperiod
  - C. cool day temperature regime
  - D. cool night temperature regime
38. Botanical names are written in:
- A. English
  - B. Latin
  - C. Greek
  - D. German

39. The greenhouse insect pest problem of aphids can be effectively managed by using:
- A. biological control such as lady beetles
  - B. chemical control such as the use of an insecticidal soap
  - C. the cultural control of washing them off the plant with a strong stream of water
  - D. all of the above
40. In order to preserve foliage in a more natural, pliable state, place stems in:
- A. glycerin
  - B. bleach
  - C. antifreeze
  - D. borax
41. Which glazing material for greenhouses allows the greatest light transmittance?
- A. fiberglass
  - B. polyethylene
  - C. glass
  - D. polycarbonate
42. To pasteurize a container root medium, heat it to:
- A. 120 degrees for 30 minutes
  - B. 120 degrees for 60 minutes
  - C. 180 degrees for 30 minutes
  - D. 180 degrees for 60 minutes
43. A guideline for estimating the size for a floral design for a defined space is known as
- A. Rule of Thirds
  - B. Third Rule
  - C. The Golden Ratio
  - D. The Golden Rule
44. The term variegated means?
- A. Leaves can only be both yellow and green.
  - B. Leaves have patches, stripes, or marks of different colors.
  - C. Leaves have only stripes of different colors.
  - D. Leaves are solid green with no other colors.
45. Systemic dyeing occurs by plants absorbing color through the
- A. Petal
  - B. Leaf
  - C. Sepal
  - D. Stem



**Figure 1**

46. A Freesia (*Figure 1*) is an example of a \_\_\_\_\_.
- A. Bulb
  - B. Tuber
  - C. Corm
  - D. Rhizome
47. \_\_\_\_\_ is the single most important element to keep flowers fresh after delivery from a supplier.
- A. Air/ Ventilation
  - B. Water
  - C. Light
  - D. Cool Temperatures
48. The three primary ingredients in floral preservatives are sugar, \_\_\_\_\_, and an acidifier.
- A. Biocide
  - B. Salt
  - C. Chlorophyll
  - D. Iodine
49. The sense of stability in a design both physically and visually is known as
- A. Rhythm
  - B. Balance
  - C. Scale
  - D. Unity
50. A floral design with a strong sense of \_\_\_\_\_ shows an organization of elements so they appear to belong together.
- A. Rhythm
  - B. Balance
  - C. Scale
  - D. Unity



**2017 National FFA Floriculture CDE  
General Knowledge Exam  
ANSWER KEY**

<b>Question #</b>	<b>Answer</b>	<b>Reference</b>	<b>Page #</b>	<b>Corresponding Standards</b>
1	D	Introduction to Horticulture, Interstate	165	NRS.01.02.03.b
2	D	Introduction to Horticulture, Interstate	226	PS.01.03.01.c
3	C	Introduction to Horticulture, Interstate	719	PS.01.01.01.c
4	D	Introduction to Horticulture, Interstate	720	PS.02.01.02.c
5	B	Introductory Horticulture, Delmar	24	PS.02.02.03.c
6	D	Introductory Horticulture, Delmar	13	PS.02.01.02.c
7	D	Introductory Horticulture, Delmar	52	PS.01.03.01.c
8	B	Introductory Horticulture, Delmar	165	BS.02.04.02.a
9	D	Introduction to Horticulture, Interstate	83	PS.02.02.05.c
10	A	Introduction to Horticulture, Interstate	98	PS.02.02.06.b
11	C	Introduction to Horticulture, Interstate	100	PS.02.02.06.b
12	D	Introduction to Horticulture, Interstate	141	PS.01.03.02.c
13	A	Introduction to Horticulture, Interstate	141	PS.01.03.01.c
14	C	Ball Red Book, Ball Publishing, 17 <sup>th</sup> edition, volume 2	35	PS.01.03.01.c
15	A	Ball Red Book, Ball Publishing, 17 <sup>th</sup> edition, volume 2	39	PS.01.03.01.c
16	D	Ball Red Book, Ball Publishing, Greenhouse and Equipment	209	BS.02.04.01.b
17	B	Floriculture, Interstate Publishers	102	PS.02.02.01.b
18	A	Greenhouse Operation and Mgt, Prentice Hall, 4 <sup>th</sup> edition	395	PS.01.03.01.c
19	C	Greenhouse Operation and Mgt, Prentice Hall, 4 <sup>th</sup> edition	347	NRS.01.02.05.a
20	B	Introduction to Horticulture, Interstate, 2 <sup>nd</sup> edition	232	PS.01.01.02.c
21	B	Introduction to Horticulture, Interstate, 2 <sup>nd</sup> edition	109	PS.03.02.07.b PS.01.01.03.c
22	D	Introduction to Horticulture, Delmar, 7 <sup>th</sup> edition	60	PS.01.03.01.c
23	A	Introduction to Horticulture, Delmar, 7 <sup>th</sup> edition	186	PS.03.03.04.b
24	B	Floriculture-Greenhouse and Floral Design, Interstate	423	PS.04.02.02.c
25	D	Floriculture-Greenhouse and Floral Design, Interstate	235	CS.01.01.02.b

26	C	Introduction to Floriculture, Academic Press	46	PS.03.05.04.b
27	D	Introduction to Floriculture, Academic Press	15	PS.03.05.03.b
28	D	Ball Red Book, Ball Publishing, Greenhouse and Equipment	75	PS.01.01.03.c
29	B	Greenhouse Operation & Management, 7 <sup>th</sup> ed	381-383	PS.01.03.06.c PS.02.03.0.a
30	B	Greenhouse Operation & Management, 7 <sup>th</sup> ed.	207	PS.01.03.02.c
31	A	Greenhouse Operation & Management, 7 <sup>th</sup> ed.	207	PS.03.01.03.c
32	A	Greenhouse Operation & Management, 7 <sup>th</sup> ed	432-433	PS.02.02.05.c PS.03.03.04.a
33	C	Greenhouse Operation & Management, 7 <sup>th</sup> ed	214-215	PS.01.03.03.b PS.01.03.02.c
34	D	Greenhouse Operation & Management, 7 <sup>th</sup> ed	572-576	CRP.03.02.01.a CRP.03.02.02.a
35	C	Greenhouse Operation & Management, 7 <sup>th</sup> ed	587	CRP.11.01.02.b
36	D	Greenhouse Operation & Management, 7 <sup>th</sup> ed	319	PS.02.03.01.a PS.02.03.02.c
37	A	Greenhouse Operation & Management, 7 <sup>th</sup> ed	354-355	PS.01.01.01.b PS.01.01.01.c
38	B	Introduction to Horticulture, Interstate	74	PS.02.01.02.c
39	D	Greenhouse Operation & Management, 7 <sup>th</sup> ed		PS.03.03.01.c PS.03.03.02.b
40	A	Principles of Floral Design, Scace and DelPrince	441-444	PS.03.05.04.b
41	C	Introduction to Horticulture, Interstate	41	PS.01.01.01.c
42	C	Greenhouse Operation & Management, 7 <sup>th</sup> ed	238	PS.01.02.01.c
43	A	Principles of Floral Design, G-W Publisher	121	PS.04.02.01.c
44	B	Principles of Floral Design, G-W Publisher	210	NRS.01.02.02.b
45	D	Principles of Floral Design, G-W Publisher	141	PS.02.02.05.c
46	C	Principles of Floral Design, G-W Publisher	87	PS.02.02.05.c
47	B	Principles of Floral Design, G-W Publisher	100	PS.03.05.04.b
48	A	Principles of Floral Design, G-W Publisher	102	PS.03.05.04.b
49	B	Principles of Floral Design, G-W Publisher	115	PS.04.02.01.c
50	D	Principles of Floral Design, G-W Publisher	127	PS.04.02.01.c



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**Directions:** Select the best answer for each question and mark your selection on the separate scantron sheet provided. *Mark answers in the General Knowledge Exam section on the scantron located in the left side of the scantron.*

1. A circular design does not have \_\_\_\_\_.
  - a. Balance
  - b. Filler flowers
  - c. A focal point
  - d. Massing flowers
  
2. Most fungal diseases grow best in \_\_\_\_\_.
  - a. Dry, arid air
  - b. Low moisture conditions
  - c. High moisture conditions
  - d. Seasons with drought
  
3. Mums are considered a short-day crop; that is, the plant sets flower buds and blooms only when \_\_\_\_\_.
  - a. Nights and days are long
  - b. Nights are long and days are short
  - c. Nights are short and days are long
  - d. Nights and days are short
  
4. During respiration, plants \_\_\_\_\_.
  - a. Use the sun's energy
  - b. Produce sugars
  - c. Use oxygen
  - d. Form complex compounds
  
5. If green plants show a \_\_\_\_\_ color, this suggests a nitrogen deficiency.
  - a. White
  - b. Yellow
  - c. Dark green
  - d. Purple

6. \_\_\_\_\_ exists when the terminal bud produces hormones that inhibit or prevent the growth of axillary buds on the same shoot.
- Cell dominance
  - Root dominance
  - Atypical dominance
  - Apical dominance
7. Floral foam is sufficiently soaked when \_\_\_\_\_.
- It changes to a darker shade of green
  - The foam floats back to the top of the water
  - Particles of the foam begin to float in the water
  - Air bubbles are no longer coming out of the foam
8. \_\_\_\_\_ seeding is when seeds are sown in a separate place from where the plants will eventually grow to maturity.
- Direct
  - Sideways
  - Indirect
  - Top
9. \_\_\_\_\_ is used to accentuate the flowers and colors used in a design.
- Harmony
  - Unity
  - Accent
  - Repetition
10. \_\_\_\_\_ are chemicals used to control snails and slugs.
- Fungicides
  - Rodenticides
  - Molluscicides
  - Nematocides
11. Small green insects with piercing mouth parts are \_\_\_\_\_.
- Aphids
  - Mealybugs
  - Scale
  - Mites

12. The recommended daytime temperature range for indoor plants is \_\_\_\_\_.
- 60-70° F
  - 55-80° F
  - 60-85° F
  - 50-85° F
13. \_\_\_\_\_ is one of the basic floral design shapes.
- Fan
  - Diagonal
  - Oval
  - Circular
14. In the list of flowers/materials below, which list is not all line flowers:
- Liatris, gladiolus, snapdragons, cattail
  - Bells of Ireland, carnations, branches, snapdragons
  - Liatris, delphinium, gladiolus, bells of Ireland
  - Foxglove, branches, lupine, cattail
15. Joe placed a box of apples in his flower cooler. The next day he saw some cut flowers looking bad and deteriorating. Could the apples have caused this problem?
- Yes, fruit produces ethylene gas which can cause flowers to senesce.
  - Yes, diseases on fruit are easily transferred to cut flowers causing their deterioration.
  - No, storing fruit in a cooler with cut flowers is never a problem. The flowers deteriorated from some other pathogen,
  - No, the apples could not have caused damage to the cut flowers in such a short time.
16. Floral foam should be hydrated before use in a flower arrangement. Which of these methods is the best for accomplishing the soaking of the foam?
- The foam is forced by weight to be totally immersed in the water
  - The foam is pushed down into the water by hand
  - The foam is allowed to float on the surface until it is soaked
  - The foam is placed in the bottom of a water reservoir one-half of the height of the block of foam

17. A wholesale greenhouse operation has grown 4,250 six inch pots of poinsettias. At the end of the Christmas season, 3,789 pots were sold. The wholesale selling price was \$3.85 per pot. The retail businesses sold the pots of poinsettias for \$6.89. The cost per pot grown was \$2.16 per pot. What was the net return on the poinsettia crop to the greenhouse operation?
- \$14,587.65
  - \$6,403.41
  - \$5,407.65
  - \$11,518.56
18. You work for a retail flower shop in Bloomington, Indiana. You are figuring a bill for a customer. In Bloomington the state sales tax is 5%, the city sales tax is 0.5%, and the county sales tax is 1%. The cost of the arrangement for the customer is \$72.45. What is the total of the customer's bill?
- \$72.45
  - \$72.81
  - \$77.16
  - \$76.07
19. The wire services that a retail flower shop can use are:
- Society of American Florists, FTD, and Teleflora
  - FTD, Teleflora, Florafax, American Floral Services, and Carik
  - Florafax, FTD, American Floral Services
  - American Floral Services, American Academy of Floriculture, Florafax, and Carik
20. In growing potted chrysanthemums, the desirable temperature range for flower bud initiation is:
- 62 to 65 degrees F at night
  - Above 68 degrees F at night
  - 60 to 62 degrees F at night
  - 65 to 68 degrees F at night
21. As a grower you want to use "soft" pesticides for plant pest control. Which group below includes "soft" pesticides?
- Fungicides, bactericides, insect growth regulators
  - Insect growth regulators, botanical insecticides, horticultural oils
  - Horticulture oils, insecticidal soaps, insecticides
  - Miticides, insecticidal soaps, horticulture oils
22. The place in the plant where the process of photosynthesis occurs is:
- In all plant cells
  - In all cells within the leaf
  - In green chloroplasts within cells
  - In cells in the leaf petiole

23. A solenoid valve is used in greenhouses:
- As an electrical device used to control the flow of water in greenhouses
  - As a valve controlled totally by water pressure to cut water on and off
  - As a valve controlled by temperature to cut heat on and off
  - As an electrical shut on and off system for ventilation fans
24. A manometer is used in a greenhouse to measure:
- Water pressure in an irrigation system line
  - Difference between low and high temperature
  - Air pressure between layers of plastic
  - Gas pressure in a gas heater
25. In horticulture, the term "explant" is:
- A cross between cultivars within a species
  - A plant that came from a genetic mutation
  - A plant part other than stem or leaves such as a bulb or corm
  - Small pieces of plant material used in tissue culture
26. In greenhouse plant growing a zero DIF will result in:
- Shorter plants compared to plants grown with a positive DIF
  - Taller plants compared to plants grown with a positive DIF
  - A decrease in how much light a plant receives each day
  - A wide range between daytime and nighttime temperatures in a greenhouse
27. The three secondary colors in flower arrangements are:
- Red, yellow, and blue
  - Orange, green, and violet
  - Purple, yellow, and blue
  - Green, purple, and red
28. The nutrient iron is essential in plants because:
- Iron is required for strong stems
  - Iron is required for leaf formation
  - Iron is required for root development
  - Iron is required to produce chlorophyll
29. \_\_\_\_\_ buds are found at the base of a leaf petiole and next to the stem.
- apical
  - axillary
  - dominant
  - epidermal

30. A plant with a tunicate bulb is a(n) \_\_\_\_\_.
- a. peony
  - b. tulip
  - c. iris
  - d. Easter lily
31. Binomial classification of a plant requires a \_\_\_\_\_ and \_\_\_\_\_ for the name.
- a. genus and specific epithet
  - b. family and order
  - c. common and scientific component
  - d. species and family
32. A tissue in a seed that provides stored food for the embryo is \_\_\_\_\_.
- a. endosperm
  - b. zygote
  - c. seed coat
  - d. hypocotyl
33. The process of propagating plants on an agar gel or nutrient medium is known as \_\_\_\_\_.
- a. grafting
  - b. budding
  - c. micropropagation
  - d. none of the above
34. A florists' wire with a gauge of 18 will be \_\_\_\_\_ than florists' wire with a gauge of 28.
- a. shorter
  - b. longer
  - c. thinner
  - d. thicker
35. On a financial planning sheet, the costs of the plant materials (i.e. purchase cost of seeds, cuttings, bulbs, etc.) would be examples of \_\_\_\_\_.
- a. wholesale costs
  - b. overhead costs
  - c. direct costs
  - d. fixed costs



36. Floral preservatives for cut flowers should contain all of the following except \_\_\_\_\_:
- a. nitrogen fertilizer
  - b. a sugar source
  - c. an acidifier
  - d. a microbicide
37. What type of environment do chrysanthemums require to produce flowers?
- a. short day photoperiod
  - b. long day photoperiod
  - c. cool day temperature regime
  - d. cool night temperature regime
38. Injecting dilute sulfuric acid into the irrigation system during greenhouse production will:
- a. increase the root medium pH
  - b. decrease the root medium pH
  - c. decrease and then increase the root medium pH
  - d. not change root medium pH
39. What are the organelles that capture and process the light that a plant intercepts?
- a. mitochondria
  - b. nuclei
  - c. chlorophylls
  - d. chloroplasts
40. The process of \_\_\_\_\_ is when a plant loses water through stomates.
- a. transpiration
  - b. translocation
  - c. transduction
  - d. acclimatization
41. Which glazing material for greenhouses allows the lowest light transmittance?
- a. fiberglass
  - b. polyethylene
  - c. double-layer polyethylene
  - d. polycarbonate

42. The calculated difference between the day temperature and night temperature in a greenhouse production situation is known as \_\_\_\_\_.
- a. HID
  - b. STS
  - c. DIF
  - d. IPM
43. Before using a chemical you should refer to the SDS or
- a. Safety Detail Sheet
  - b. Safety Data Sheet
  - c. Storage Detail Sheet
  - d. Storage Data Sheet
44. The binomial system for naming plants is
- a. used on the North American continent only.
  - b. used only in the United States.
  - c. used Internationally.
  - d. no longer used today.
45. Plants that have two \_\_\_\_\_ are known as dicots.
- a. nucleus
  - b. cells
  - c. flowers
  - d. cotyledons
46. Chloroplasts contain chlorophyll that \_\_\_\_\_ green light giving plants their green color.
- a. reflect
  - b. absorb
  - c. produce
  - d. create
47. \_\_\_\_\_ insecticides are pesticides that are translocated throughout the plant and kill any insects that feed on the plant.
- a. Insecticidal Soaps
  - b. Horticulture Oils
  - c. Botanical
  - d. Systemic

48. When dealing with plant diseases, there must be \_\_\_\_\_ things present for any plant disease to form.
- a. one
  - b. two
  - c. three
  - d. four
49. \_\_\_\_\_ plants are plant material kept specifically for the purpose of propagation.
- a. Stock
  - b. Parent
  - c. Cutting
  - d. Hardwood
50. Grasshoppers begin their life cycle as an egg, transition into a larva, and change into an adult. This would be classified as \_\_\_\_\_ metamorphosis.
- a. complete
  - b. incomplete
  - c. holometabolous
  - d. ametabolous



2018 National FFA Floriculture  
Career Development Event  
General Knowledge Exam  
Answer Key



Number	Answer	Standard(s)
1	c	<a href="#">PS.04.02.01.c.</a>
2	c	<a href="#">PS.01.01.03.c.</a>
3	b	<a href="#">PS.03.02.05.c.</a>
4	c	<a href="#">PS.02.03.02.c.</a>
5	<del>d</del> b	<a href="#">PS.01.03.01.c.</a>
6	d	<a href="#">PS.03.05.01.b.</a>
7	d	<a href="#">PS.04.02.02.c.</a>
8	c	<a href="#">PS.03.02.05.c.</a>
9	d	<a href="#">PS.04.02.01.c.</a>
10	c	<a href="#">PS.03.03.01.c.</a>
11	a	<a href="#">PS.03.03.02.b.</a>
12	d	<a href="#">PS.03.02.05.c.</a>
13	d	<a href="#">PS.04.02.01.c.</a>
14	b	<a href="#">PS.02.02.05.c.</a>
15	a	<a href="#">PS.03.05.04.b.</a>
16	c	<a href="#">PS.04.02.02.c.</a>
17	c	<a href="#">CS.02.02.03.b.</a>
18	c	<a href="#">CRP.02.01.01.c.</a>
19	b	<a href="#">ABS.05.03.02.a.</a>
20	a	<a href="#">PS.03.02.05.c.</a> ; <a href="#">PS.01.01.01.c.</a>
21	b	<a href="#">PS.03.03.01.c.</a>
22	c	<a href="#">PS.02.02.05.c.</a>
23	a	<a href="#">NRS.01.02.05.a.</a>
24	c	<a href="#">NRS.01.02.05.a.</a>
25	d	<a href="#">PS.03.01.03.c.</a>
26	a	<a href="#">PS.01.01.02.c.</a>
27	b	<a href="#">PS.04.02.01.c.</a>
28	d	<a href="#">PS.02.02.04.c.</a>
29	b	PS.03.01.03.c.
30	b	NRS.01.02.
31	a	PS.02.01.02.c.
32	a	PS.03.01.03.b.
33	c	<a href="#">PS.03.01.03.c.</a>
34	d	CRP.10.04.01.c.
35	c	CRP.03.02

36	a	CRP.10.04.01.c.
37	a	PS.01.01.02.c.
38	b	PS.01.03.05.b.
39	d	PS.02.02.03.c.
40	a	PS.02.02.03.c.
41	c	CRP.10.04.01.c.
42	c	ESS.01.01.
43	b	<a href="#">PS.03.03.04.b.</a> ; <a href="#">BS.02.04.02.a.</a>
44	c	<a href="#">NRS.01.02.02.b.</a>
45	d	<a href="#">NRS..01.02.02.b.</a>
46	a	<a href="#">PS.01.01.01.c.</a>
47	d	<a href="#">PS.03.03.01.c.</a>
48	c	<a href="#">PS.03.03.01.c.</a>
49	a	<a href="#">PS.03.01.03.c.</a>
50	b	<a href="#">PS.03.03.02.b.</a>



# 2019 Floriculture Career Development Event

Created: Oct-19

Select the best answer for each question and mark your selection on the separate scantron sheet provided. Mark answers in the **Exam** section on the scantron located in the bottom right hand corner.

## MULTIPLE CHOICE

1. Wreaths, garlands, loose flowers and petals were the floral design styles used during which historical floral period?
  - A. Greek and Roman
  - B. Victorian
  - C. Art Deco
  - D. Art Nouveau
2. Which historical floral period includes floral design styles that were massed, rounded and fan shaped?
  - A. Egyptian
  - B. Art Deco
  - C. American Colonial
  - D. Oriental
3. Which principal of design is defined as *'a oneness or being complete in itself'*?
  - A. Harmony
  - B. Unity
  - C. Proportion
  - D. Line
4. What color adaptation is created by adding gray to a pure hue?
  - A. Chroma
  - B. Tint
  - C. Tone
  - D. Shade
5. Which color scheme or color harmony includes hues that are adjacent to each other on the color wheel?
  - A. Complementary
  - B. Analogous
  - C. Monochromatic
  - D. Triadic

6. When an arrangement is too small for its surroundings, it is said to be out of \_\_\_\_\_.
  - A. Harmony
  - B. Tone
  - C. Rhythm
  - D. Proportion
  
7. Which color harmony uses two hues that are directly opposite to each other on the color wheel?
  - A. Complementary
  - B. Analogous
  - C. Monochromatic
  - D. Triadic
  
8. An appropriate lightweight wire to use for corsage construction is:
  - A. #18 gauge
  - B. #9 gauge
  - C. #22 gauge
  - D. #28 gauge
  
9. Chrysanthemums, Asters, Daisies, and other flat-faced flowers are wired for corsages using which method?
  - A. Pierce
  - B. Hook-Wiring
  - C. Stitch
  - D. Clutch or Wrap-Around
  
10. Which item is a floral piece worn by a man and typically worn on the right-side jacket lapel, near the buttonhole?
  - A. Corsage
  - B. Wristlet
  - C. Boutonniere
  - D. Clutch

11. Which of the following elements of design allows each flower/form to have its own individual importance?
- A. Depth
  - B. Space
  - C. Form
  - D. Line
12. Which bouquet style would be best for a full wedding gown with a long train?
- A. Tussy Mussy
  - B. Cascading
  - C. Presentation
  - D. Round Cluster
13. A Hogarth Curve floral design is created by
- A. An "O" shape
  - B. A "C" shape
  - C. A "S" shape
  - D. A "H" shape
14. Clogged stems in cut flowers are caused by an air embolism. An air embolism is
- A. Where disease organisms move into the flower from the air clogging the stem.
  - B. Where a bubble of air enters the xylem preventing water from reaching the flower.
  - C. Where the difference between room and flower cooler temperature clog the stem.
  - D. Where the flower stem clogs when the flower cooler temperature drops below 36 degrees F.
15. Which wiring method should be used for carnations when they are to be used in corsages and boutonnieres?
- A. Piercing
  - B. Clutch
  - C. Hook
  - D. Stitch
16. The part of the plant stem that produces all new cells is the
- A. Heartwood
  - B. Xylem
  - C. Phloem
  - D. Cambium



17. In the following list of pesticides the \_\_\_\_\_ must be mixed with water to apply.
- A. Emulsifiable concentrate
  - B. Granules
  - C. Dusts
  - D. Baits
18. An acid loving crop grows best at a pH of \_\_\_\_\_.
- A. 6.8-7.4
  - B. 6.2-6.8
  - C. 4.5-5.8
  - D. 5.8-6.2
19. Auxins and gibberellic acid are hormones in plants that promote growth through \_\_\_\_\_.
- A. Cell division
  - B. Cell enlargement
  - C. Cell specialization
  - D. Cell protection
20. Double layer poly should have how much space between layers for proper inflation and full insulation?
- A. 1 inch
  - B. 12-14 inches
  - C. At least 2 feet
  - D. 6-8 inches
21. In a horticulture business, the product you choose to produce and retail should be at what price above the total production and marketing costs (all fixed and variable costs) to make it feasible to produce and sell?
- A. 100%
  - B. 150%
  - C. 250%
  - D. 500%

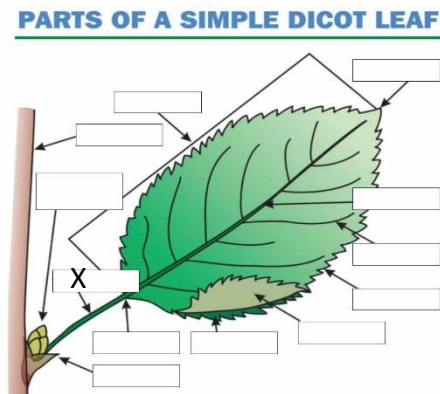
22. The amount of light a plant receives greatly influences root growth, shoot growth, and flowering. The highest quality greenhouse plants need \_\_\_\_\_ foot candles of light per day?
- A. 500-1,000
  - B. 2,000-3,000
  - C. 4,000-6,000
  - D. 7,000-8,000
23. Botrytis often presents itself on flowers as gray mold. This disease is caused by a(an) \_\_\_\_\_.
- A. Fungus
  - B. Virus
  - C. Bacteria
  - D. Environmental Condition
24. The \_\_\_\_\_ container is  $\frac{1}{2}$  as high as it is wide.
- A. Standard pot
  - B. Bulb pan
  - C. Azalea pot
  - D. Mum pot
25. Greenhouse production often requires insecticides to be sprayed to prevent insect damage on flowers. Insecticides that are applied in gaseous form are \_\_\_\_\_.
- A. Systemic
  - B. Fumigants
  - C. Contact
  - D. Repellents
26. Rubber Plants are commonly reproduced through an asexual propagation method known as \_\_\_\_\_, which is shown to the right.
- A. Air layering
  - B. Compound layering
  - C. Whip or tongue grafting
  - D. Cleft grafting



27. Most plants grow best in the 40-80 percent relative \_\_\_\_\_ range. This is the amount of moisture that is contained in the air surrounding the plant.
- A. Foot candles
  - B. Particles
  - C. Humidity
  - D. Dew point
28. One popular way of identifying plants is to observe their leaf \_\_\_\_\_; which will tell the person if the leaves are opposite, alternate, whorled, etc.
- A. Arrangement
  - B. Margins
  - C. Shape
  - D. Forms
29. A growing media amendment that is grown primarily in marshes, bogs or swamps and has a high-water holding capacity is known as \_\_\_\_\_.
- A. Perlite
  - B. Vermiculite
  - C. Sand
  - D. Peat Moss
30. In order to have a year-round supply of cut flowers, such as Tulips and Crocus, that grow from bulbs; greenhouse growers are known to \_\_\_\_\_ bulbs. This means they plant bulbs out of season and grow them in a cold or refrigerated area for 10-12 weeks.
- A. Force
  - B. Fertilize
  - C. Prune
  - D. Divide
31. The waxy coating on the outside of a leaf, called the \_\_\_\_\_, serves to prevent excessive water loss from the leaf tissues.
- A. Petiole
  - B. Stoma
  - C. Cuticle
  - D. Vein

32. When a plant is showing signs of \_\_\_\_\_ deficiency, you might notice the leaves turning a dark to reddish leaf color.
- A. Nitrogen
  - B. Phosphorus
  - C. Potassium
  - D. Sunlight

33. The item “labeled X” in the figure below, is the \_\_\_\_\_, which attaches the leaf to the stem.
- A. Petiole
  - B. Stipule
  - C. Midrib
  - D. Apex



34. The \_\_\_\_\_ civilization is credited with being one of the first cultures to use floral arrangements in their homes.
- A. American
  - B. Greek
  - C. European
  - D. Egyptian

35. The height of an arrangement should be at least \_\_\_\_\_ times the container’s greatest dimension.
- A.  $\frac{1}{2}$
  - B.  $1\frac{1}{2}$
  - C. 3
  - D. 5

36. Flowers, such as Baby's Breath or Aster, are commonly referred to as \_\_\_\_\_ flowers in floral arrangements.
- A. Texture
  - B. Focal
  - C. Filler
  - D. Form
37. Which of the following greenhouse substrate components is derived from volcanic rock?
- A. Vermiculite
  - B. Perlite
  - C. Peat
  - D. Bark Medium
38. Which of the following flowers could be used as a focal point in a floral design?
- A. Wax flower
  - B. Bird-of-Paradise
  - C. Miniature Carnation
  - D. Leatherleaf Fern
39. The primary benefit(s) of shading a greenhouse is (are):
- A. To keep the greenhouse temperatures lower
  - B. To reduce light intensity
  - C. To reduce pest populations
  - D. A and B
40. The process of \_\_\_\_\_ is when a plant loses water through stomata.
- A. Transduction
  - B. Translocation
  - C. Transpiration
  - D. None of the above
41. A greenhouse pest that is small with tan, feather-like wings would likely be a \_\_\_\_\_.
- A. Fungus gnat
  - B. Greenhouse whitefly
  - C. Western flower thrip
  - D. Shore fly

42. \_\_\_\_\_ is when a plant secretes a substance to inhibit growth of another plant.
- A. Allelopathy
  - B. Anthesis
  - C. Transcription
  - D. Translation
43. The first thing to do before applying a pesticide is \_\_\_\_\_.
- A. Fill the spray tank
  - B. Read the label
  - C. Put on personal protective equipment
  - D. Rinse out the sprayer tank
44. \_\_\_\_\_ is the development of a plant from a seed or spore.
- A. Scarification
  - B. Stratification
  - C. Vernalization
  - D. Germination
45. Aluminum can affect the color of what florist's flower?
- A. Hydrangea
  - B. Dahlia
  - C. Zinnia
  - D. Asiatic Lily
46. If one were to make a tint of yellow, what color would be added?
- A. Black
  - B. Gray
  - C. White
  - D. Any of the above
47. Which of the following could be used to preserve or dry flowers and foliage?
- A. Silica gel
  - B. Sand
  - C. Glycerin
  - D. All of the above

48. Which of the following would be a direct cost in a floral shop:
- A. Cut flowers in the cooler
  - B. Insurance for the shop's building
  - C. Energy bills
  - D. Membership fee for FTD
49. The following is not a characteristic of an insect:
- A. Two tentacles
  - B. Six legs
  - C. Two pairs of wings
  - D. Three body segments
50. Most indoor foliage plants need which kind of lighting?
- A. Direct sunlight
  - B. Bright indirect light
  - C. Medium light
  - D. Bright light



# 2019 Floriculture Career Development Event

Created: Feb-20

## FLORICULTURE: EXAM SECTION KEY

Question	Answer	Point Value	Standard	Standard	Standard
1.	A	4	CS.02.02.02.C.		
2.	C	4	CS.02.02.02.C		
3.	B	4	PS.04.02.01.C.		
4.	C	4	PS.04.02.01.C.		
5.	B	4	PS.04.02.01.C.		
6.	D	4	PS.04.02.01.C.		
7.	A	4	PS.04.02.02.C.		
8.	D	4	C3.03.04.02.C.		
9.	B	4	PS.04.02.02.C.		
10.	C	4	PS.04.01.01.C.		
11.	B	4	PS.04.02.01.C.		
12.	B	4	PS.04.01.01.C.		
13.	C	4	PS.04.02.01.C		
14.	B	4	PS.02.03.02.C.		
15.	A	4	PS.04.02.02.C.		
16.	D	4	PS.02.02.03.C.		
17.	A	4	PS.03.03.01.C.		
18.	C	4	PS.01.03.02.C.		
19.	B	4	PS.02.02.01.B.		
20.	D	4	CS.04.01.02.B.		
21.	C	4	ABS.01.01.01.B.		
22.	C	4	PS.01.01.01.C.		



[Type here]

23.	A	4	NRS.04.02.01.B.		
24.	B	4	C3.03.04.02.C.		
25.	B	4	PS.03.03.01.C.		
26.	A	4	PS.03.01.03.C.		
27.	C	4	PS.01.01.02.C.		
28.	A	4	NRS.01.02.02.B.		
29.	D	4	PS.01.02.01.C.		
30.	A	4	PS.02.02.05.C.		
31.	C	4	PS.02.02.04.C.		
32.	B	4	PS.01.03.01.C.		
33.	A	4	PS.02.02.04.C.		
34.	D	4	CS.02.02.02.C.		
35.	B	4	PS.04.02.01.C		
36.	C	4	PS.04.01.01.C.		
37.	B	4	PS.03.02.02.B.		
38.	B	4	PS.04.01.01.C.		
39.	D	4	PS.01.01.01.C.		
40.	C	4	PS.02.03.02.C.		
41.	C	4	NRS.01.02.03.B.		
42.	A	4	PS.01.03.01.C.		
43.	B	4	PS.03.03.04.B.		
44.	D	4	PS.02.02.05.C.		
45.	A	4	PS.01.03.01.C.		
46.	C	4	PS.04.02.02.C.		
47.	D	4	PS.03.05.03.B.		
48.	A	4	ABS.01.01.01.B.		
49.	A	4	NRS.01.02.03.B.		
50.	B	4	PS.02.03.01.C.		



# NATIONAL FFA FLORICULTURE CDE

## GENERAL KNOWLEDGE EXAM

Select the best answer for each question and mark your selection on the separate E-Rubric answer sheet provided. **Mark answers in the General Knowledge Exam section on the E-Rubric Answer Sheet.**

1. The water-conducting tissue of plants is called \_\_\_\_\_.
  - a. xylem
  - b. phloem
  - c. peduncle
  - d. pedicel
  
2. A chemical compound used as an additive to prevent the growth of bacteria in vase water is considered to be a(an) \_\_\_\_\_.
  - a. acidifier
  - b. biocide
  - c. botrytis
  - d. citric acid
  
3. Rolling back petals of a flower to create a more open blossom is called \_\_\_\_\_.
  - a. petalling
  - b. reflexing
  - c. sewing
  - d. tailoring
  
4. What is a common target date for bracts to develop color and the flowers open?
  - a. September 15
  - b. October 10
  - c. November 15
  - d. December 25

5. A state of equilibrium where both sides of the design are equal.
  - a. asymmetrical design
  - b. symmetrical design
  - c. composition
  - d. form
  
6. The portion of a design engaged by objects. An area occupied by flowers, foliage, or other objects within a floral design.
  - a. positive space
  - b. negative space
  - c. accent
  - d. focal point
  
7. The organization of components into a harmonious whole resulting in a cohesive relationship of all parts defines \_\_\_\_\_.
  - a. unity
  - b. balance
  - c. theme
  - d. harmony
  
8. Florist wire is sold by gauge. A thin, light wire would be what number gauge?
  - a. 1
  - b. 12
  - c. 22
  - d. 28
  
9. The secondary colors consist of:
  - a. green, orange, violet
  - b. Violet, blue, red
  - c. yellow, red, blue
  - d. green, yellow, blue
  
10. Fresh flowers should be stored in a floral cooler at 34-38 degrees F with 80-90% relative humidity.
  - a. True
  - b. False

11. A purlin in greenhouse construction is used for what purpose?
  - a. Frame components spanning the space between the eave and the ridge.
  - b. A panel attached to the greenhouse that permits opening for ventilation.
  - c. A component of the greenhouse frame running the length of the greenhouse just below the roof covering that connects trusses together.
  - d. A component of the greenhouse frame spanning the width of the greenhouse that is welded or bolted together.
  
12. The essential ingredients for photosynthesis to take place in the plant is:
  - a. Water, oxygen, carbon, light
  - b. Water, carbon dioxide, chlorophyll, light
  - c. Carbon dioxide, glucose, chlorophyll, light
  - d. Oxygen, light, hydrogen, glucose
  
13. Of the following nutrient list which one includes only micronutrients?
  - a. Zinc, copper, sulfur, phosphorus, boron, calcium, and chlorine
  - b. Manganese, zinc, potassium, calcium, copper, iron, and chlorine
  - c. Iron, nitrogen, sulfur, magnesium, molybdenum, boron, and manganese
  - d. Boron, zinc, copper, molybdenum, iron, manganese, and chlorine
  
14. Applying too much nitrogen to plants can cause adverse effects on plant growth. Of the following four items which is not a plant's response to excessive nitrogen:
  - a. Weaken the stem because of long and soft growth
  - b. Lower the plants resistance to disease
  - c. Yellow or light green leaves on the plant
  - d. Lower the quality of the fruit of the plant causing them to be soft to ship
  
15. The three basic parts of a seed are:
  - a. Seed coat, endosperm, and embryo
  - b. Cotyledons, roots, and seed coat
  - c. Endosperm, roots, and embryo
  - d. Primer, seed coat, and embryo

16. In a flower shop which of the following are not considered overhead expenses?
- Rent or mortgage payment
  - Hard goods
  - Insurance
  - Utilities (water, gas, electricity)
17. Auxin is produced in the shoot tips by a plant. The purpose of auxin in the plant is to:
- Inhibit lateral branch development
  - Start the process of flower development
  - Promote lateral branch development
  - Encourage seed development
18. REI to a greenhouse worker means:
- Reliant environmental interval
  - Retractant emergency integration
  - Reliable environmental information
  - Restricted entry interval
19. Which pesticide LD50 number listed below is the most toxic?
- LD50 of 5,045
  - LD50 of 45
  - LD50 of 545
  - LD50 of 145
20. An armature in floral arrangements is used:
- To create a framework to hold stems in place
  - To support a floral design container
  - To create a system for transporting floral work
  - To make a flower stem longer

21. If a species has separate plants with each plant having only male flowers or female flowers, the plant is considered \_\_\_\_\_.
- complete
  - dioecious
  - monoecious
  - perfect
22. \_\_\_\_\_ is a process in which glucose combines with oxygen to produce energy in a form that can be used by plants.
- Cohesion
  - Photosynthesis
  - Respiration
  - Transpiration
23. A pesticide label cautions against dermal contact; this means the poison could enter the body by \_\_\_\_\_.
- contact with skin
  - ingesting
  - inhaling
  - transfusion
24. \_\_\_\_\_ deficiency appears as a marginal yellowing or scorch on the edges of leaves on the lower portion of the plant.
- Calcium
  - Iron
  - Nitrogen
  - Potassium
25. Photosynthesis primarily occurs within the \_\_\_\_\_ inside plant cells.
- chloroplast
  - golgi apparatus
  - nucleus
  - vacuole

26. A plant with a species name *macrophylla* could be expected to have \_\_\_\_\_.
- small leaves
  - large leaves
  - small flowers
  - large flowers
27. The \_\_\_\_\_ are crescent shaped and are responsible for opening the stoma.
- lenticels.
  - vascular bundles
  - receptacles
  - guard cells
28. Chrysanthemums typically flower in late summer or fall. Their photoperiod category is considered which of the following:
- Day-Neutral Plants
  - Long-Day Plants
  - Short-Day Plants
  - Daily Light Integral Plants
29. \_\_\_\_\_ are responsible for cell division and differentiation. They are produced in the roots and transported throughout the plant through the xylem.
- Ethylenes
  - Gibberellins
  - Auxins
  - Cytokinins
30. Many daylily, dahlia, and gladiola varieties are polyploid, which means that they have more than one set of \_\_\_\_\_.
- zygotes
  - chromosomes
  - nuclei
  - scions

31. The pigment \_\_\_\_\_ produces orange-yellow flowers.
- carotene
  - chlorophyll
  - anthocyanin
  - xanthophyll
32. Which of the following plant characteristics belongs to monocots?
- netted leaf veins
  - scattered vascular bundles
  - flower parts in multiples of four or five
  - taproot system
33. What are four things growing medium provides for plants?
- darkness, food, nutrients, oxygen
  - carbon dioxide, disease resistance, sugars, water
  - nutrients, oxygen, support, water
  - vitamins, organic matter, support, water
34. Most essential elements for plant growth are available to most plants when the soil pH is between \_\_\_\_\_.
- 3.0 to 5.5
  - 5.5 and 7.0
  - 7.0 to 10.5
  - 10.5 to 12.0
35. What is a miniature arachnid that sucks sap from plants?
- aphid
  - beetle
  - mite
  - Nematode



36. Poinsettias are very susceptible to root rot diseases caused by *Pythium*, *Rhizoctonia*, and *Thielaviopsis* fungi. How can these disease problems be reduced?
- Apply fungicides when appropriate and adhere to proper watering.
  - Introduce beneficial microorganisms to the greenhouse environment.
  - Provide cooler day temperatures and warmer night temperatures.
  - Use varieties genetically engineered to be resistant to root rot.
37. How are chrysanthemums classified?
- by response group, height, and flower form
  - by response group, speed of rooting, and flower texture
  - by root growth, height, and flower color
  - by root length, leaf size, and flower form
38. Why are Easter lilies a relatively difficult crop to grow?
- Easter falls on a different date each year.
  - They are extremely sensitive to dry medium.
  - They are short-day plants grown in the spring.
  - They have so many pest and disease problems.
39. What is the best explanation why bedding plant seeds are sown in rows?
- to ensure that developing seedlings have good light exposure
  - to keep different plant varieties from becoming intermingled
  - to maintain an organized, attractive seed germination room
  - to reduce the possible spread of disease across an entire flat
40. What are small plants grown in small amounts of medium in divided trays?
- cormels
  - explants
  - liners
  - plugs

41. In pricing retail items, it is important to include additional hard good costs, which would include:
- The floral foam and vase used to construct the arrangement
  - The flowers used to make the design
  - The filler used to complete the design
  - The gas used in the delivery vehicle
42. Fresh goods used to create a retail floral design are typically marked up from wholesale pricing at the following rate:
- 10%
  - 200%
  - 50%
  - 500%
43. As the wholesale price of fresh flowers increased due to supply issues, the resulting price affect was seen by consumers:
- The price of delivery was decreased
  - The price of add-on purchased increased
  - The availability of flowers increased
  - The retail price of flowers increased
44. Which of the following floral products is a seasonal design specifically representing the fall harvest season?
- An evergreen wreath with colorful ornaments
  - A blooming spring bulb in a vase
  - A summer bouquet of sunflowers
  - A cornucopia (horn of plenty) filled with flowers, fruit, and vegetables
45. How could a florist or garden shop offer products that promote a sustainable and environmentally conscientious perspective?
- Offer organically grown plants
  - Sell organic fertilizers
  - Market seasonal and local products
  - All of the above.

46. In response to supply issues for fresh flowers from South America, the following result was by floral retailers in the wholesale cost of fresh goods:
- The price of hard goods decreased
  - The price of flowers increased
  - The price of flowers decreased
  - The shipping costs decreased
47. Which of the following products would be the best choice of tools / materials to adhere fresh flowers in constructing a wristlet corsage:
- Hot Glue
  - Cold Glue
  - Wire
  - Braiding
48. Which life stage is most damaging to ornamental crops from the lepidoptera order of insects?
- Adult
  - Larvae
  - Nymph
  - Egg
49. If a plant is showing a yellowing in the leaves, it is most likely deficient in the nutrient:
- Phosphorus
  - Potassium
  - Zinc
  - Nitrogen
50. When removing thorns from roses, it is important to avoid tearing the outer layer, or bark, which would damage the plants:
- Xylem and phloem
  - Roots
  - Petals
  - Pith



# FLORICULTURE CDE

Created: Aug-22

## General Knowledge Exam Key

Question	Answer	Point Value	Standard	Standard	Standard
1.	a	4	PS.02.02.03.c		
2.	b	4	PS.03.05.04.b		
3.	b	4	PS.04.02.02.c		
4.	c	4	PS.03.02.05.c		
5.	b	4	PS.04.02.01.c		
6.	a	4	PS.04.02.01.c		
7.	a	4	PS.04.02.01.c		
8.	d	4	PS.04.02.02.c	CS.03.04.02.c	
9.	a	4	PS.04.02.01.c		
10.	a	4	PS.03.05.04.b		
11.	c	4	PS.03.02.06.b		
12.	b	4	PS.02.02.04.c	PS.02.03.01.c	
13.	d	4	PS.01.03.06.c	PS.01.03.01.c	
14.	c	4	PS.03.03.01.c	PS.01.03.06.c	PS.01.03.03.c
15.	a	4	PS.02.02.06.b		
16.	b	4	ABS.01.01.01.b	CS.02.02.03.b	CRP.03.02.01.a
17.	a	4	PS.02.02.04.c		
18.	d	4	BS.02.04.02.a	CS.03.01.01.c	CS.03.03.04.c
19.	b	4	BS.02.04.01.b	BS.02.04.02.a	CS.03.01.01.c
20.	a	4	PS.04.02.01.c	PS.04.02.02.c	

Question	Answer	Point Value	Standard	Standard	Standard
21.	b	4	PS.03.01.01.b		
22.	c	4	PS.02.03.02.c		
23.	a	4	BS.02.04.02.a	PS.03.03.04.b	CS.03.03.03.b
24.	d	4	PS.01.03.01.c		
25.	a	4	PS.02.03.01.c		
26.	b	4	NRS.01.02.02.b		
27.	d	4	PS.02.02.04.c		
28.	c	4	PS.01.01.01.c		
29.	d	4	PS..02.02.03.c		
30.	b	4	NRS.01.02.02.b		
31.	a	4	PS.02.02.05.c		
32.	b	4	PS.02.02.05.c		
33.	c	4	PS.01.02.01.c		
34.	b	4	PS.01.03.02.c		
35.	c	4	NRS.01.02.03.b		
36.	a	4	NRS.04.02.01.b		
37.	a	4	PS.02.02.05.c		
38.	a	4	PS.03.02.05.c		
39.	d	4	NRS.04.02.01.b		
40.	d	4	PS.03.02.05.c		
41.	a	4	ABS.01.01.01.b		
42.	b	4	ABS.01.01.01.b		
43.	d	4	ABS.01.01.01.b		
44.	d	4	CS.02.02.02.c		

Question	Answer	Point Value	Standard	Standard	Standard
45.	d	4	CS.03.01.01.c		
46.	b	4	CS.02.02.03.b		
47.	b	4	CS.03.04.02.c		
48.	b	4	PS.03.03.01.c		
49.	d	4	PS.01.03.06.c		
50.	a	4	PS.02.02.03.c		



# 2022 NATIONAL FFA FLORICULTURE CDE

## GENERAL KNOWLEDGE EXAM

Select the best answer for each question and mark your selection on the separate E-Rubric answer sheet provided. *Mark answers in the General Knowledge Exam section on the E-Rubric Answer Sheet.*

1. What period of Floral Design style was taken from surviving art, which was simplistic, repetitious, and highly stylized? During this period, flowers and fruits were placed in carefully alternating patterns. Chaplets, wreaths, garlands, and flower collars were portrayed, along with bowls of flowers carried or held a lot.
  - a. French Period
  - b. Colonial Period
  - c. Egyptian Period
  - d. Baroque Period
  
2. Rising wholesale prices of cut flowers and hard goods are due to which of the following market conditions?
  - a. Supply chain and transportation issues
  - b. Lack of appropriate temperatures in the environment
  - c. Poor growing conditions
  - d. Lack of stimulus payments
  
3. A plant that lives for more than two years, usually flowering every year.
  - a. Perennial
  - b. Biennial
  - c. Annual
  - d. Bulb

4. Flower \_\_\_\_\_ is the terminal phase of developmental processes that leads to the death of a flower, which includes flower wilting, shedding of flower parts and fading of blossoms.
- schizocarp
  - tendrils
  - xerophyte
  - senescence
5. A \_\_\_\_\_, is a product applied as a spray or dip that slows the water loss from plant cells, reducing the speed of transpiration and extending the vase life of cut plant materials.
- acidifier
  - biocide
  - antitranspirant
  - glucose
6. The principles of design describe \_\_\_\_\_ as the area in, around, and between the components of the design, defined by the three-dimensional area occupied by the composition.
- space
  - pattern
  - line
  - form
7. A grouping of three adjacent hues on the 12-spoke color wheel is considered
- monochromatic
  - analogous
  - tetradic
  - triadic
8. The ease of visual movement that results from gradual degrees of change among one or more of the elements is \_\_\_\_\_.
- repetition
  - depth
  - unity
  - transition



9. The general rule to use to transplant seedlings is after:
  - a. A sufficient root system has developed
  - b. The first true leaves have developed
  - c. Four-Six leaves have developed
  - d. As soon as the plant emerges from the seed coat
  
10. Which is the most common form of sexual plant propagation?
  - a. Cuttings
  - b. Division
  - c. Grafting
  - d. Seeds
  
11. Acclimatization in plant production is:
  - a. Process where root development starts on a plant cutting.
  - b. Process of absorption of water into the plant.
  - c. Process in which plants adjust to a different growing environment.
  - d. Process where disease resistance is enhanced.
  
12. A clogged floral stem is caused by an air embolism. This is where:
  - a. A bubble of air enters the xylem
  - b. Air dries out the floral stem
  - c. A bubble of air enters the phloem
  - d. Air causes the rupture of the floral stem
  
13. The temperature to pre-cool potted azaleas to force them to bloom is:
  - a. 25-30 degrees F
  - b. 60-65 degrees F
  - c. 35-40 degrees F
  - d. 45-50 degrees F

14. Which of these groups contain the three secondary elements needed for plant growth?
- a. Calcium, Manganese, and Zinc
  - b. Boron, Sulfur, and Carbon
  - c. Copper, Magnesium, and Iron
  - d. Calcium, Magnesium, and Sulfur
15. The breathing pore in the stem is called a:
- a. Scar
  - b. Lenticel
  - c. Bud
  - d. Scale
16. Which plant hormone stimulates cell division?
- a. Cytokinins
  - b. Inhibitors
  - c. Gibberellins
  - d. Auxins
17. In greenhouse operation, which of the following is not a fixed cost?
- a. Taxes
  - b. Interest on an equipment loan
  - c. Labor
  - d. Insurance
18. Foliage turning purple on a greenhouse plant shows a deficiency of:
- a. Nitrogen
  - b. Phosphorus
  - c. Magnesium
  - d. Sulfur

19. In a floral shop business, the difference between the cost of goods sold and the retail price is called the:
- Mark up
  - Price differential
  - Mark down
  - Profit
20. Gladiolus and snapdragon stems are geotropic. This means that the tip of the flower:
- Will turn down to the ground or gravity
  - Will bend toward the light
  - Will turn toward the hottest temperature area
  - Will bend away from the ground or gravity
21. IGR in horticulture is:
- Internal Growth Response
  - Industry Growth Response
  - Insect Growth Regulator
  - Inhibitor Ground Research
22. Which of the following statements are true about Carbon Dioxide and greenhouse plant growth?
- Carbon Dioxide is only needed in the plant respiration process
  - Carbon Dioxide has no bearing on plant growth in the greenhouse
  - The Carbon Dioxide level can never be a limiting factor in a greenhouse because it is used in such small amounts
  - Limited Carbon Dioxide in the greenhouse reduces photosynthesis and therefore plant growth
23. Some cut flowers can benefit from a pre-treatment of citric acid. Citric acid is an acidifier. An acidifier can cause what benefit to some cut flowers?
- It adjusts the acidity of the stem to a level that encourages the uptake of water and nutrients.
  - It adjusts the acidity of the stem to prevent deterioration of the flower color.
  - It adjusts the acidity in the stem, which will lead to an increase in photosynthesis
  - It adjusts the acidity in the stem to prevent disease formation.

24. Which of the following is considered a type of LINE that can be found in a floral design?
- a. Implied
  - b. Dynamic
  - c. Vertical
  - d. All of the above
25. The repetition of a form can lend unity to a design, whereas variation among the forms can generate interest or contrast.
- a. True
  - b. False
26. The portion of a composition or design which is physically occupied by something such as a flower, a branch, a container or some solid object is called \_\_\_\_\_.
- a. void space
  - b. positive space
  - c. negative space
  - d. none of the above
27. Which of the following are examples of ACHROMATIC colors?
- a. Red and green
  - b. Blue and orange
  - c. Black, White, and Gray
  - d. Pink and Purple
28. Not only does a floral design need to be physically balanced but also \_\_\_\_\_ balanced.
- a. axis
  - b. centrally
  - c. visually
  - d. vertically

29. Which of the following flowering plants react to pH levels with color variation?
- Lilies
  - Sunflowers
  - Hydrangeas
  - Carnations
30. Considering supply and demand, what would be the anticipated prediction for the effect on rose prices surrounding the February holiday of Valentine's Day?
- Rose prices would maintain steady and unaffected
  - Rose prices would drop
  - Rose prices would increase
  - Not applicable; roses are not available during that season
31. Close placement of one material directly behind the primary material, giving a three-dimensional appearance, is called \_\_\_\_\_.
- pave
  - grouping
  - tailoring
  - shadowing
32. Modifying or altering a material's appearance by trimming, gluing or stapling is called \_\_\_\_\_.
- tailoring
  - roping
  - lacing
  - All of the above
33. Transpiration is the process of a plant or flower losing what?
- Minerals
  - Food
  - Water
  - None of the above

34. A line that moves the eye in sharp alternative directions is called a \_\_\_\_\_ line.
- a. straight
  - b. curved
  - c. zigzag
  - d. implied
35. The presence of sticky 'honeydew' drops on the leaves of plants within a greenhouse production system could indicate which of the following pests:
- a. Whitefly
  - b. Aphid
  - c. Worms
  - d. Wasps
36. What do many spring flowering bulb crops require in order to flower?
- a. fertilization
  - b. pollination
  - c. transpiration
  - d. vernalization
37. What is a condition in which a leaf has a striped, margined, or mottled color rather than green, where green is normal?
- a. Chlorotic
  - b. Compounded
  - c. Striated
  - d. Variegated
38. Stunted and slow growth, yellowing of lower leaves of the plant, and a poor root system are symptoms of \_\_\_\_\_ deficiency.
- a. calcium
  - b. nitrogen
  - c. phosphorus
  - d. potassium

39. What is a miniature arachnid that sucks sap from plants?
- a. aphid
  - b. beetle
  - c. mite
  - d. nematode
40. Which watering system is commonly used in the propagation phase of production because it reduces water stress on cuttings?
- a. drip irrigation
  - b. capillary mats
  - c. overhead sprinklers
  - d. intermittent mist systems
41. What is the number one pest problem with poinsettias?
- a. aphids
  - b. mealy bugs
  - c. thrips
  - d. whiteflies
42. What is the best explanation for why bedding plant seeds are sown in rows?
- a. to ensure that developing seedlings have good light exposure
  - b. to keep different plant varieties from becoming intermingled
  - c. to maintain an organized, attractive seed germination room
  - d. to reduce the possible spread of disease across an entire flat
43. Which size ribbon is used for corsage work?
- a. #3
  - b. #5
  - c. #9
  - d. #40

44. Which flowers would be traditionally used for the spring holiday of Easter?
- Dozen Rose Vases
  - Single Red Rose Bud Vases
  - Potted Chrysanthemums
  - Potted Easter Lilies
45. What effect does the presence of fresh flowers and plants have on mental health?
- Flowers and plants have a positive impact; they improve mental health
  - Flowers and plants have a negative impact; they harm mental health
  - Flowers and plants have no impact; they die too quickly
  - Flowers and plants have a negative impact; they are too expensive
46. Which flowers would be traditionally used for Mother's Day?
- Cymbidium Orchid corsages
  - Cornucopias filled with fruits and vegetables
  - Rose boutonnieres
  - Evergreen Centerpieces
47. The growth of the parts of plants with respect to the force of gravity:
- Geotropism
  - Phototropism
  - Photoperiodism
  - Distortion
48. What are floral preservatives?
- A Clorox bleach solution
  - A mixture of sugars and lipids
  - A combination of sugars, a biocide, and an acidifier
  - A solution of vitamins, minerals, and sugars



49. What is the 'chain of life' levels of distribution for cut flowers according to the Society of American Florists?
- a. Grower, Shipper, Wholesaler, Retailer, Consumer
  - b. Grower, Wholesaler, Shipper, Retailer, Consumer
  - c. Wholesaler, Shipper, Grower, Consumer, Retailer
  - d. Retailer, Wholesaler, Grower, Shipper, Consumer
50. Tropical flowers require higher temperatures than a typical flower. What degree range is preferred?
- a. 42-55 Degrees F
  - b. 55-75 Degrees F
  - c. 80-95 Degrees F
  - d. 95-105 Degrees F



# 2022 NATIONAL FFA FLORICULTURE CDE

Created: Nov-22

## General Knowledge Exam Key

Question	Answer	Point Value	Standard	Standard	Standard
1.	c	4	PS.04.02.01.c		
2.	a	4	ABS.01.01.01.b.		
3.	a	4	PS.02.02.05.c		
4.	d	4	PS.02.02.05.c		
5.	c	4	PS.01.01.02.c	PS.01.01.03.c	
6.	a	4	PS.04.02.01.c	PS.04.02.01.c	
7.	b	4	PS.04.02.01.c		
8.	d	4	PS.04.02.01.c		
9.	b	4	PS.03.02.02.b	PS.03.05.01.b	
10.	d	4	PS.03.02.05.c	PS.03.02.02.b	
11.	c	4	PS.01.01.03.c		
12.	a	4	PS.02.02.03.c	PS.02.02.04.c	
13.	c	4	PS.01.01.02.c		
14.	d	4	PS.01.03.06.c		
15.	b	4	PS.02.02.03.c		
16.	a	4	PS.03.03.05.c		
17.	c	4	ABS.05.03.02.a		
18.	b	4	PS.01.03.01.c		
19.	a	4	ABS.05.03.02.a		
20.	d	4	PS.02.02.05.c		

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21.	c	4	PS.03.03.01.c	PS.03.02.01.b	
22.	d	4	PS.02.03.01.c	PS.02.03.02.c	
23.	a	4	PS.03.05.01.b	PS.03.05.03.b PS.03.05.04.b	PS.03.05.05.b
24.	d	4	PS.04.02.01.c		
25.	a	4	PS.04.02.01.c		
26.	b	4	PS.04.02.01.c	PS.04.01.02.c	
27.	c	4	PS.04.02.01.c		
28.	c	4	PS.04.02.01.c		
29.	c	4	PS.01.03.02.c.		
30.	c	4	CS.02.02.03.b.		
31.	d	4	PS.04.02.01.c		
32.	a	4	PS.04.02.01.c		
33.	c	4	PS.01.01.02.c	PS.01.01.03.c	
34.	c	4	PS.04.02.01.c		
35.	b	4	PS.03.03.02.b.		
36.	d	4	PS.02.02.05.c		
37.	d	4	PS.02.01.02.c		
38.	b	4	PS.01.03.01.c		
39.	c	4	NRS.01.02.03.b	NRS.04.02.01.b	
40.	d	4	PS.01.01.03.c		
41.	d	4	NRS.01.02.03.b		
42.	d	4	PS.02.02.05.c		
43.	a	4	PS.04.02.02.c		
44.	d	4	CS.02.02.02.c.		

Question	Answer	Point Value	Standard	Standard	Standard
45.	a	4	CS.03.01.01.c.		
46.	a	4	CS.02.02.02.c		
47.	a	4	CS.02.02.02.c		
48.	c	4	PS.02.03.02.c.		
49.	a	4	PS.02.03.02.c.		
50.	b	4	PS.02.03.02.c.		