



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 (CO₂). Air on the average contains what percent CO₂?

- 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 H₂O 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**

Question #	Answer	Reference	Page #	Corresponding Standards
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 th edition, volume 2	35	PS.01.03.01.c
15	A	Ball Red Book, Ball Publishing, 17 th 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 th edition	395	PS.01.03.01.c
19	C	Greenhouse Operation and Mgt, Prentice Hall, 4 th edition	347	NRS.01.02.05.a
20	B	Introduction to Horticulture, Interstate, 2 nd edition	232	PS.01.01.02.c
21	B	Introduction to Horticulture, Interstate, 2 nd edition	109	PS.03.02.07.b PS.01.01.03.c
22	D	Introduction to Horticulture, Delmar, 7 th edition	60	PS.01.03.01.c
23	A	Introduction to Horticulture, Delmar, 7 th 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 th ed	381-383	PS.01.03.06.c PS.02.03.0.a
30	B	Greenhouse Operation & Management, 7 th ed.	207	PS.01.03.02.c
31	A	Greenhouse Operation & Management, 7 th ed.	207	PS.03.01.03.c
32	A	Greenhouse Operation & Management, 7 th ed	432-433	PS.02.02.05.c PS.03.03.04.a
33	C	Greenhouse Operation & Management, 7 th ed	214-215	PS.01.03.03.b PS.01.03.02.c
34	D	Greenhouse Operation & Management, 7 th ed	572-576	CRP.03.02.01.a CRP.03.02.02.a
35	C	Greenhouse Operation & Management, 7 th ed	587	CRP.11.01.02.b
36	D	Greenhouse Operation & Management, 7 th ed	319	PS.02.03.01.a PS.02.03.02.c
37	A	Greenhouse Operation & Management, 7 th 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 th 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 th 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