2015 National FFA
Agronomy Career Development Event
Written Exam

1. Extreme heat during which stage of growth is most damaging to grain yields:

a. seedling emergence
b. pollination
c. hard dough to maturity
d. flag leaf

2. A major factor to consider in the selection of a variety of corn or soybean to plant on your particular farm is:

a. hybrid lines
b. fertility requirements
c. water requirements
d. days to maturity

3. A major factor to consider in the selection of a variety of alfalfa for northern Montana is:

a. days to maturity
b. water requirements
c. winter hardiness
d. fertility requirements

4. A raceme is considered a type of:

a. tiller
b. root structure
c. leaf collar
d. inflorescence

5. The standard test weight for a bushel of wheat is:

a. 60
b. 56
c. 50
d. 48

6. The apical stem on your canola crop has been slightly damaged by spray drift. It may regrow from:

a. internodes
b. axillary buds
c. radicle
d. cotyledons

7. Nutrients and food reserves are supplied a young pea plant during emergence by the:

a. radicle
b. cotyledons
c. unifoliates
d. trifloiates

8. Nitrogen fixation in peanuts occurs in specialized root structures called:

a. cotyledons
b. radicles
c. collars
d. nodules

9. If a wheat plant population density is low, the wheat plants will compensate by:

a. producing smaller heads
b. producing smaller seeds
c. tillering more
d. tillering less

10. Example of plants that are pulses are:

a. barley, rye
b. peas, lentils
c. canola, flax
d. oats, rice

11. The hilum of a bean seed is:

a. a thin shell covering the seed
b. where the radicle forms
c. where the first leaves form
d. where the seed is attached to the pod

12. An oat plant that is said to be in the “boot”, is near:

a. heading out
b. maturity, harvest
c. soft dough stage of development
d. emerging from the soil

13. Durum is a type of wheat used in the production of:

a. flour for breads
b. flour for pastry
c. flour for pasta
d. animal feeds

14. An advantage of early planting of spring crops is:

a. avoid stress from high temperatures later
b. reduce excessive tillering
c. reduce lodging
d. develop a strong root system

15. An advantage of seeding spring crops later is:

a. less disease near harvest time
b. more protein in the grain at harvest
c. better control of annual weeds before planting
d. less insect pressure

16. Lodging in grains tend to happen because of excess:

a. heat
b. potassium
c. nitrogen
d. plant population

17. The most common crop used in the production of malt is:

a. oats
b. barley
c. corn
d. rye

18. Baling of alfalfa or grass hay (non-preservative) for storage should occur at:

a. 10 – 12 % moisture
b. 17 – 19 % moisture
c. 20 – 23 % moisture
d. above 23 % moisture

19. The most damaging situation for alfalfa stand is to:

a. harvest at full bloom
b. harvest at 50% bloom
c. harvest at 10% bloom
d. harvest pre bloom

20. A key element in the formation of protein in hard red winter wheat is:

a. calcium
b. potassium
c. nitrogen
d. boron

21. Carrots raised for seed are examples of:

a. annuals
b. biennials
c. perennials
d. spring annuals

22. Which of the following plants has a trifoliolate leaf structure?

a. cucumbers
b. soybeans
c. peanut
d. sunflowers

23. The following plant has a pinnate leaf structure:

a. cucumber
b. peanut
c. soybean
d. sunflower

24. Many noxious weeds and perennial grasses reproduce by seed as well as underground structures called:

a. rhizomes
b. stolons
c. brace roots
d. haplocorms

25. Coleoptile length of a plant is useful to determine:

a. maturity
b. winter hardiness
c. planting depth
d. row spacing

26. In the production of hay, the single most important factor that determines quality is:

a. variety of grass or alfalfa
b. moisture content of plant when swathed
c. type of conditioner on swather
d. maturity of plant when swathed

27. Chlorosis can be defined as:

a. shrinking or narrowing of the xylem
b. pale, yellow or bleached leaves
c. failure of roots to absorb water
d. failure of flowers to produce pollen

28. A crop of barley can best take up which of the following forms of nitrogen?

a. nitrate
b. nitrite
c. atmospheric nitrogen
d. 0-46-0-0

29. Plants that are deficient in phosphorous will often show symptoms of:

a. yellowing leaves, weak stems
b. brown, dry spots on the leaves
c. blue-green or purple leaves, stunted growth
d. pale green leaves, thickened stems

30. In alfalfa, which of the following insects induces chlorosis:

a. alfalfa weevil
b. lygus bug
c. grasshopper
d. leaf hopper

31. Yellowing of the lower leaf tips, continuing down the midrib of the leaf, and finally death of the lower leaves of grain plants indicate:

a. nitrogen deficiency
b. sulfur deficiency
c. potassium deficiency
d. excess soil moisture

32. A 50 pound bag of fertilizer that is labeled 3-6-3 contains:

a. 3 pounds of nitrogen (N)
b. 3 pounds of phosphorus (P_2O_5)
c. 3 pounds of potassium (K_2O)
d. 1.5 pounds of phosphorus (P_2O_5)

33. Your soil test shows you need 60 pounds of N to produce the desired bushels of wheat per acre. If you are applying anhydrous ammonia, 82-0-0, how many pounds should you apply?

a. 49
b. 74
c. 60
d. 82

34. Which of the following is a beneficial insect?

a. aphid
b. grasshopper
c. honey bee
d. Colorado potato beetle

35. Gluten is a current topic in food discussions. Gluten found in grains is a form of:

a. protein
b. carbohydrate
c. fat
d. sugar

36. The goal of sustainable agriculture practices is to:

a. develop crop rotations for high yields
b. maintain and improve the land for generations
c. use only approved organic methods
d. not use synthetic fertilizers

37. Diatomaceous earth could be used on an organic farm for:

a. nitrogen fertilizer
b. weed control
c. prevention of dampening off of seedlings
d. insect control

38. Cover crops, on organic farms, are used for:

a. soil improvement
b. grazing for animals
c. insect control
d. disease control

39. One advantage of a no-till farming operation is improved:

a. disease resistance in the crops
b. soil tilth
c. insect control
d. herbicide and fertilizer utilization

40. Pheromones can be used to help:

a. trap insects
b. decrease certain bacterial diseases
c. improve herbicide mode of action
d. better utilize fertilizer in the soil

41. Organic matter in the soil is most important for good crop yields when:

a. rainfall is normal
b. rainfall is above normal
c. rainfall is below normal
d. organic matter has no impact on crop yields

42. To sell a product as organic the crop must have been grown on land that no synthetic chemical inputs were used for the previous _____ years.

a. 3
b. 5
c. 7
d. 10

43. Most soybeans planted today are tolerant of:

a. 2, 4-D
b. Buctril
c. Paraquat
d. Glyphosate

44. If anhydrous ammonia costs $1,000 per ton and is 82% N, what is the cost of N per pound?

a. $0.79
b. $0.61
c. $1.17
d. $0.89

45. A soil test calls for 55 pounds of phosphorus per acre. How many pounds of (18-46-0) would you need to apply to meet the soil test requirement?

a. 92
b. 111
c. 272
d. 120

46. A farmers' production costs for his crop totals $780 per acre. If he has pre sold his crop at $4.90 per bushel, how many bushels does he need to average per acre to cover his production costs?

a. 159
b. 180
c. 200
d. 211

47. Depth of fertility soil testing should reflect:

a. reflect depth of tillage.
b. be at least 3 feet.
c. stay in the top 2 inches of the soil
d. according to the type and amount of fertilizer

48. A normal percent of oil extracted from soybeans is:

a. 15
b. 20
c. 25
d. 30

49. A plant continues to produce more leaves and stem after it has begun to flower. This growth habit is called.

a. monoecious
b. dioecious
c. indeterminate
d. determinate

50. A farmer wants to get an accurate estimate on his corn crop yield several weeks before harvest so he can pre sell most of his crop. Use the following information to determine his approximate yield .
Plant population per acre = 24,800 plants
1 ear of corn per plant
Each ear = 16 rows with 56 kernels per row
1600 kernels per pound
Using the standard weight per bushel for corn, the yield would be:

a. 248
b. 308
c. 344
d. 356

Key 2015 National FFA Agronomy Exam

1. b
2. d
3. c
4. d
5. a
6. b
7. b
8. d
9. c
10 b
11. d
12. a
13. c
14. a
15. c
16. c
17. b
18. a
19. d
20. c

21. b
22. b
23. b
24. a
25. c
26. d
27. b
28. a
29. c
30. d
31. a
32. b
33. b
34. c
35. a
36. d
37. d
38. a
39. b
40. a

41. c
42. a
43. d
44. b
45. d
46. a
47. a
48. b
49. c
50. a