

**2017 State FFA Crops Contest
Management Exam**

Name: _____
FFA Chapter: _____
Contestant No.: _____

Soybean (Questions 1-25). Circle one answer for each question.

1. Edible seeds of legumes such as soybean are called:
 - a. Achenes
 - b. Cereals
 - c. Pulses
 - d. Stamens

2. The first structure to appear above the soil at the "cracking stage" during the germination of soybean is the:
 - a. Apical meristem
 - b. Hypocotyl
 - c. Cotyledons
 - d. Epicotyl

3. Nutrients and food reserves are supplied to young soybean plants during emergence by the:
 - a. Radicle
 - b. Cotyledons
 - c. Unifoliates
 - d. Trifoliates

4. The major "raw" material for photosynthesis by soybeans is:
 - a. Carbon dioxide
 - b. Oxygen
 - c. Nitrogen gas
 - d. Water vapor

5. The first true leaves on soybean are:
 - a. Cotyledons
 - b. Unifoliolates
 - c. Trifoliates
 - d. Meristems

6. Soybean plants with apical meristem damaged by hail will often regrow from:
 - a. Axillary buds
 - b. Cotyledons
 - c. Unifoliates
 - d. Internodes

7. Nitrogen fixation in soybean occurs in nodules and involves a symbiotic relationship with:
 - a. bacteria
 - b. fungi
 - c. microsporidia
 - d. mycorrhizae

8. Soybean varieties grown in Minnesota are indeterminate types. This means that:
 - a. they complete their vegetative growth before flowering
 - b. new flowers and pods appear as the plant grows in height
 - c. the number of potential pods is determined by the variety
 - d. the number of potential pods is determined by the environment

9. The stage of growth of soybeans known as V3 indicates:
 - a. three internodes have leaves
 - b. three pods at each node
 - c. three seeds per pod
 - d. three trifoliolate leaves

10. The stage of growth of soybean known as R5 indicates:
 - a. Beginning bloom
 - b. Beginning pod
 - c. Beginning seed
 - d. Beginning maturity

11. Soybean varieties grown in Minnesota are typically in which maturity groups:
 - a. 00-II
 - b. III-V
 - c. VI-VI
 - d. VII-IX

12. Under favorable soil conditions, soybean should generally be planted how deep:
 - a. 0.75 inches
 - b. 1.50 inches
 - c. 2.25 inches
 - d. 2.75 inches

13. This post-emergence herbicide active ingredient is used on the majority of the soybean acreage in Minnesota:
 - a. Glufosinate
 - b. Glyphosate
 - c. Metolachlor
 - d. Metribuzin

14. Economical optimum planting rates for soybean in Minnesota are typically:
 - a. 34,000 to 36,000 seeds/acre
 - b. 75,000 to 100,000 seeds/acre
 - c. 140,000 to 160,000 seeds/acre
 - d. 225,000 to 275,000 seeds/acre

15. If a soybean plant density is low, soybean plants will adjust by:
 - a. Tillering
 - b. Branching
 - c. Producing fewer seeds
 - d. Producing smaller seeds

16. Pre-emergence mechanical weed control in a recently planted soybean crop can be achieved with a:
 - a. Mulch finisher
 - b. Field cultivator
 - c. Rotary hoe
 - d. Culti-packer

17. Post-emergence herbicides are applied:
 - a. To the soil before planting the crop
 - b. To the soil before the crop emerges
 - c. After the crop emerges, but before the weeds emerge
 - d. After the crop and weeds emerge

18. Which of the following is the best description of iron deficiency chlorosis symptoms:
 - a. Purple discoloration of veins on the upper leaves
 - b. Mottling of the trifoliolate leaves
 - c. Chlorosis on the margins of the unifoliolate leaves
 - d. Interveinal chlorosis on the trifoliolate leaves

19. The maximum moisture content at which soybean seed can be marketed without discount is:
 - a. 9.0%
 - b. 11.0%
 - c. 13.0%
 - d. 15.5%

20. Which one of the following is effective at reducing soybean aphid damage:
 - a. Crop rotation
 - b. Seed inoculants
 - c. Row width
 - d. Insecticidal sprays

21. High night temperatures during seed fill may decrease soybean yield by increasing:
- Respiration
 - Photosynthesis
 - Translocation
 - Diffusion
22. The hilum of soybean seed is:
- The part of the seed from which the stem forms
 - The part of the seed from which the primary root forms
 - The part of the seed attached to the pod
 - A thin covering that protects the seed's embryo
23. The protein and oil in soybean seed is typically in the ratio of:
- 1:1 protein to oil
 - 1:2 protein to oil
 - 2:1 protein to oil
 - 3:1 protein to oil
24. Soybeans do not need the nutrient _____ if they have been properly inoculated.
- calcium
 - nitrogen
 - phosphorus
 - potassium
25. Which of the following is a common disease of soybeans in Minnesota?
- leaf rust
 - stem rust
 - purple loosestrife
 - white mold
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Wheat (Questions 26-50)

26. The structure that protects the first wheat leaf as it emerges through the soil during germination is the:
- mesocotyl
 - hypocotyl
 - epicotyl
 - coleoptile
27. Wheat has a root system described as:
- branched
 - fibrous
 - seminal
 - tap

28. Wheat belongs to a group of crop plants known as:

- a. cereals
- b. dicots
- c. oil crops
- d. pulses

29. Winter wheat requires a period of low temperature to induce flowering. This requirement is called:

- a. photoperiodism
- b. tillering
- c. vernalization
- d. vulcanization

30. Wheat is usually planted in a row spacing of:

- a. 7 inches
- b. 14 inches
- c. 21 inches
- d. 30 inches

31. Normal seeding depth of wheat is:

- a. 0.75 inches
- b. 1.50 inches
- c. 2.25 inches
- d. 2.75 inches

32. The appearance of the flag leaf indicates the:

- a. end of tillering
- b. number of kernels per head has been determined
- c. total number of leaves has been determined
- d. plant is 30 days from maturity

33. Wheat normally forms tillers which are:

- a. additional roots
- b. additional seed-producing stems
- c. additional spikes from the same stem
- d. projections attached to the lemma

34. The maximum number of kernels per spike is determined during this growth stage:

- a. boot
- b. emergence of the seedling
- c. heading
- d. tillering

35. At the boot stage of wheat development, the plant is near:
- tillering
 - jointing
 - heading
 - maturity
36. Physiological maturity of wheat first occurs when:
- it has been 28 days since heading
 - kernel moisture content is less than 20%
 - the crop is dry enough to combine
 - the peduncle loses its green color
37. The market class of wheat used to make pasta is:
- durum
 - hard red spring
 - hard red winter
 - soft red winter
38. Which pair of diseases need to be taken into account when selecting a wheat variety for production in Minnesota:
- cyst nematode and bacterial leaf streak
 - fusarium head blight and white mold
 - bacterial leaf streak and fusarium head blight
 - white mold and cyst nematode
39. The “red” in hard red spring wheat refers to the color of the:
- anther
 - auricle
 - kernel
 - peduncle
40. Farmers need to be careful to avoid over-fertilizing wheat with _____ because it can increase lodging.
- sulfur
 - potassium
 - phosphorus
 - nitrogen
41. Delays in planting wheat until mid to late May often result in low grain yield because of:
- decreased kernels per plant
 - increased lodging
 - low plant density
 - poor seed germination

42. Assuming adequate moisture, wheat yields more at which temperature regime?
- highs in the 70's, lows in the 50's
 - highs in the 80's, lows in the 60's
 - highs in the 80's, lows in the 70's
 - highs in the 90's, lows in the 70's
43. Application of which of these nutrients will have the greatest influence on grain protein concentration?
- sulfur
 - potassium
 - phosphorus
 - nitrogen
44. The weed species most difficult to control in a growing crop of wheat:
- annual broadleaf weed
 - perennial broadleaf weeds
 - annual grass weeds
 - volunteer corn
45. Which of the following herbicides should not be used on wheat?
- Discover
 - Glyphosate
 - MCPA
 - 2,4-D
46. The disease of wheat that has caused great economic loss to Minnesota farmers during years with persistent rains during heading time and produces a toxin called "vomitoxin" is:
- ergot
 - fusarium head blight
 - leaf rust
 - tan spot
47. Fungicides can help control all but which one of the following wheat diseases?
- bacterial leaf streak
 - Fusarium head blight
 - leaf rust
 - tan spot
48. Wheat is a self-pollinated crop; consequently, seed saved from the crop will be genetically _____ to the variety planted.
- different
 - identical
 - intermediate between the two parents
 - segregating for various plant traits

49. When buying or selling wheat, the standard bushel weighs ____ pounds.

- a. 45
- b. 56
- c. 60
- d. 65

50. Hard red spring wheat is valued for its:

- a. high oil and omega-3 fatty acids
- b. low protein and soft endosperm
- c. high antioxidants
- d. high grain protein and dough mixing properties

2017 Crops Mgt. Exam Key

Soybeans

1. C
2. B
3. B
4. A
5. B
6. A
7. A
8. B
9. A
- 10.C
- 11.A
- 12.B
- 13.B
- 14.C
- 15.B
- 16.C
- 17.D
- 18.D
- 19.C
- 20.D
- 21.A
- 22.C
- 23.C
- 24.B
- 25.D

Wheat

- 26.D
- 27.B
- 28.A
- 29.C
- 30.A
- 31.B
- 32.C
- 33.B
- 34.D
- 35.C
- 36.D
- 37.A
- 38.C
- 39.C
- 40.D
- 41.A
- 42.A
- 43.D
- 44.C
- 45.B
- 46.B
- 47.A
- 48.B
- 49.C
- 50.D