

**National FFA 2012 Agronomy Career Development Event  
Written Exam**

50 Multiple Choice Questions

Choose the Best Answer

1. The NW  $\frac{1}{4}$  Sec. 12 T 19 R 32 contains a maximum of:
  - a. 40 acres
  - b. 80 acres
  - c. 160 acres
  - d. 320 acres
  
2. What type of wheat is generally used to produce spaghetti noodles:
  - a. Hard Red Winter
  - b. Soft White
  - c. Hard White
  - d. Durum
  
3. Vernalization is a process some plants require to flower and produce seed. An example of a crop that needs vernalization is:
  - a. dent corn
  - b. sweet corn
  - c. winter wheat
  - d. cotton

Use the following information to answer questions 4-8.

Jim, a wheat farmer in Texas, is planting a field of wheat which measures 1419' by 1320'. He is using a no-till drill and applying his fertilizer at the same time he seeds. He is applying 12 gallons per acre of 28% liquid nitrogen, (2.99 pounds of N per gallon) at a cost of \$1.15/gallon and 20 pounds per acre of a starter fertilizer, 11-52-0, at a cost of \$680/ton. He is seeding at a rate of 65 pounds of seed per acre and figures he will need an additional 10% seed for corners.

- 4. How many acres are in the field Jim is planting?**
- a. 14.3**
  - b. 13.2**
  - c. 43**
  - d. 58**
- 5. How many pounds of nitrogen is Jim applying at the time of seeding?**
- a. 2.2**
  - b. 35.88**
  - c. 38.08**
  - d. 45**
- 6. How many pounds of phosphorus is Jim applying at seeding time?**
- a. 52**
  - b. 20**
  - c. 15.3**
  - d. 10.4**
- 7. What is the cost of the fertilizer he is applying?**
- a. \$6.80**
  - b. \$20.60**
  - c. \$13.80**
  - d. \$12.99**
- 8. How many pounds of the seed wheat should Jim order from his local co-op? (round up if needed to the next pound)**
- a. 65**
  - b. 279**
  - c. 2795**
  - d. 3075**

**9. A benefit of a no-till cropping system is:**

- a. crop disorders are less of a problem**
- b. insect problems are usually reduced**
- c. less fuel per acre is used**
- d. machinery used in no-till systems is less expensive**

**10. A soil is considered to be an acid soil if it has a pH:**

- a. higher than 7.5**
- b. 6.6 to 7.4**
- c. below 6.5**

**11. Purple Seed Stain is found in:**

- a. corn**
- b. wheat**
- c. soybeans**
- d. cotton**

**12. A definition of an annual plant is:**

- a. a plant that lives more or less indefinitely, keeps coming back each year**
- b. a plant that grows, flowers and reproduces in one growing season**
- c. a plant that grows one year then flowers and reproduces the next**
- d. a plant that reproduces only by vegetative parts**

**13. The release of a substance by one plant that is toxic to another plant is known as:**

- a. aroma volatile**
- b. toxicity aroma**
- c. abiotic**
- d. allelopathy**

- 14. The fixation of nitrogen from the atmosphere occurs in:**
- a. cereal grains such as wheat, barley, oats**
  - b. oilseed crops such as canola**
  - c. legumes such as clovers, peas, alfalfa, beans**
  - d. vegetable crops such as carrots, squash, watermelon**
- 15. From the following list, the oral LD50 value representing the *most toxic* poison is:**
- a. 110 mg/kg**
  - b. 390 mg/kg**
  - c. 480 mg/kg**
  - d. 5,000 mg/kg**
- 16. Your crop advisor is counting plants in your corn field to determine plant population. The corn is planted in 30 inch rows with an average of 38 plants per 20 foot length. What is the plant population per acre?**
- a. 29,620**
  - b. 33,100**
  - c. 37,540**
  - d. 41,320**
- 17. A panicle type of seed head would be found on which of the following plants:**
- a. corn**
  - b. rice**
  - c. wheat**
  - d. soybeans**
- 18. Which of the different stages of growth of a corn plant is most affected by drought?**
- a. cotyledon**
  - b. dry down before harvest**
  - c. rooting**
  - d. reproductive**

**19. Many noxious weeds and grasses reproduce by underground stems that produce new plants. These underground stems are called:**

- a. stolons**
- b. tillers**
- c. adventitious roots**
- d. rhizomes**

**20. Which of the four following crops would be best in breaking up a compact soil layer or hard pan?**

- a. corn**
- b. canola**
- c. wheat**
- d. strawberries**

**21. What does IPM stand for?**

- a. Intensive Pesticide Management**
- b. Integrated Pest Management**
- c. Intensive Personnel Management**
- d. Intensive Pest Manipulation**

**22. Which of the following nutrients is considered a secondary nutrient?**

- a. phosphorus**
- b. zinc**
- c. sulfur**
- d. potassium**

**23. You have noticed some of your grass seed heads have a black growth in the florets instead of a seed. This plant disorder is probably:**

- a. nematodes**
- b. smut**
- c. a nutrient deficiency**
- d. TMV (Tobacco Mosaic Virus)**

**24. Epinasty is a term used to describe a plant that:**

- a. is in full bloom**
- b. is close to maturity**
- c. has insect infestation**
- d. downward bending of the leaves or other plant parts**

**25. The best way to improve the CEC (cation exchange capacity) of your soil is to:**

- a. use anhydrous ammonia fertilizer**
- b. add organic matter to your soil**
- c. rotate crops**
- d. use a summer fallow/crop rotation**

**26. Which of the following classes of insecticides requires the most thorough spray coverage?**

- a. contact**
- b. systemic**
- c. photosynthetic**
- d. seed treatment**

**27. The microbial conversion of organic matter nutrients into inorganic ions describes:**

- a. mass flow**
- b. surface creep**
- c. diffusion**
- d. mineralization**

**28. A nutrient has greater potential to move into ground water on a soil with:**

- a. high organic matter content**
- b. high sand content**
- c. high clay content**
- d. high silt content**

**29. Increasing the pH on certain soils increases the availability of:**

- a. microbes and earthworms**
- b. cations like calcium and magnesium**
- c. anions like iron**
- d. soil moisture**

**30. Lowering the pH on certain soils increases the availability of:**

- a. microbes and earthworms**
- b. cations like calcium and magnesium**
- c. anions like iron**
- d. soil moisture**

**31. A crop of corn can best take up which of the following forms of nitrogen?**

- a. ammonium and nitrite**
- b. ammonium and nitrate**
- c. nitrite alone**
- d. nitrogen from the atmosphere**

**32. A fertilizer that is a high pressure liquid and is 82% nitrogen is:**

- a. urea**
- b. aqua ammonia**
- c. 0-82-0 solution**
- d. anhydrous ammonia**

**33. Plant tissue analysis can give information on:**

- a. additional fertility needs**
- b. harvest date**
- c. GMO or not**
- d. number of degree days**

**34. The most severe type of soil erosion is:**

- a. gully**
- b. rill**
- c. surface creep**
- d. splash**

**35. Using dual tires on equipment:**

- a. increases the amount of surface compaction**
- b. has little or no effect on the amount of surface compaction**
- c. increases erosion**
- d. decreases erosion**

**36. An example of biological aphid control is:**

- a. using an insect growth regulator**
- b. destroying all natural predators**
- c. setting and maintaining traps**
- d. introduction and protection of natural predators**

**37. Why is it important to spray pre emergence herbicides before a rain or scheduled irrigation?**

- a. to decrease the rate of microbial activity**
- b. decrease the rate of chemical breakdown**
- c. move the herbicide into the weed germination zone**
- d. to decrease the chances of chemical run off**

**38. A wheat plant would be damaged most by a frost at what stage of development:**

- a. pre-emergence**
- b. early tillering**
- c. just before it heads out**
- d. just before harvest**



**39. If part of a field of corn is showing stripped leaves, what caused this injury?**

- a. moisture**
- b. hail**
- c. frost**
- d. aphids**

**40. If a farmer uses a disc-chisel in a tillage system, these are considered:**

- a. no-till**
- b. residue enhancers**
- c. secondary tillage**
- d. primary tillage**

**41. Banding fertilizer too close to the seed:**

- a. will increase productivity**
- b. is the best use of fertilizer**
- c. draws moisture away from the seed**
- d. is the most economical way of applying fertilizer**

**42. Often times red wheat is sold on a protein basis. What can influence the protein level in red wheat?**

- a. amount of fertilizer, especially nitrogen**
- b. amount of moisture during the growing cycle**
- c. genetics**
- d. all the above**

**43. A plant that produces a long coleoptile would have an advantage in:**

- a. a dry climate**
- b. a warm climate**
- c. a wet climate**
- d. a cold climate**

**44. Potassium fertilizer would be needed most on:**

- a. potassium rates are not effected by soil type**
- b. sandy soil**
- c. loamy soil**
- d. clay soil**

**45. Wind erosion that moves small sized particles over great distances is what type of erosion?**

- a. rill**
- b. sheet**
- c. surface creep**
- d. splash**

**46. Which of the following signal words represent the greatest hazard?**

- a. hazard**
- b. warning**
- c. danger**
- d. toxic**

**47. Tillers of a plant can best be described as:**

- a. roots**
- b. leaves**
- c. crown**
- d. stems**

**48. Select the condition that could help reduce pesticide volatilization:**

- a. high air temperatures**
- b. low relative humidity**
- c. incorporation in soil**
- d. small droplets**

**49. Which of the following best describes a leaf margin?**

- a. the surface of the leaf**
- b. the stem attached to the leaf**
- c. the vein structure in the leaf**
- d. the edge of the leaf**

**50. Following land can best be described as:**

- a. land used for recreational purposes**
- b. land set aside for homes or other structures**
- c. land left idle for one year for weed control or moisture retention**
- d. land in a government program for wildlife enhancement**