

TEST NAME: 3.00 Ag Apps
TEST ID: 2276442
GRADE: 09 - Ninth Grade - 12 - Twelfth Grade
SUBJECT: Agriculture and Renewable Natural Resources
TEST CATEGORY: School Assessment

Student: _____

Class: _____

Date: _____

1. The **best** tool to use when trimming and shaping shrubbery is the:
 - A. chain saw.
 - B. hedge shears.
 - C. lopping shears.
 - D. pruning shears.

2. Genetically modified organisms that are safety tested in laboratories and greenhouses **before** they are tested outdoors are also monitored by:
 - A. chemical salespeople.
 - B. county government.
 - C. nursery operators.
 - D. state and federal government.

3. Tissue culture may be used for:
 - A. producing genetically identical plants.
 - B. disinfecting greenhouse structures.
 - C. sexual reproduction in floral crops.
 - D. sterilization of soil products.

4. The three primary nutrients supplied in a complete fertilizer are:
 - A. carbon, hydrogen, and oxygen.
 - B. nitrogen, phosphorus, and potassium.
 - C. calcium, magnesium, and sulfur.
 - D. carbon, nitrogen, and sulfur.

5. The three parts of a seed are:
- A. root, stem, and flower.
 - B. root, seed coat, and endosperm.
 - C. an embryo, cotyledon, and new plant.
 - D. seed coat, endosperm, and embryo.
6. A procedure of fertilizer application used on row crops where the fertilizer is placed in bands about 8 inches from the row is known as:
- A. side-dressing.
 - B. top-dressing.
 - C. broadcasting.
 - D. foliar application.
7. Which career relates to plant science?
- A. Farrier
 - B. Greenskeeper
 - C. Logging foreman
 - D. Veterinarian
8. Which is a part of the stamen?
- A. Pistil
 - B. Stigma
 - C. Petal
 - D. Anther
9. Grafting is a:
- A. type of sexual propagation.
 - B. type of hybridization.
 - C. method by which two plants are divided.
 - D. method of joining two different plants.

10. Genes are comprised of:
- A mitochondria.
 - B cytoplasm.
 - C endoplasmic reticulum
 - D DNA.
11. Why does genetic engineering hold great promise in controlling disease, insects, and weeds?
- A Cheaper than developing chemicals
 - B Internal characteristics are changed
 - C Less government regulation exists
 - D Safety testing is eliminated
12. Food for the seed is stored in the:
- A seed coat.
 - B endosperm.
 - C embryo.
 - D radicle.
13. In agriscience as well as other sciences, the method used to solve a problem is called the:
- A educated-guess method.
 - B most-popular-decision technique.
 - C process of elimination.
 - D scientific method.

14. Foliar application of fertilizer is applied by:
- A. injecting the fertilizer in the soil below the plant.
 - B. placing the fertilizer in a band on either side of the row.
 - C. sprinkling the fertilizer on the ground beside the plant.
 - D. spraying the fertilizer on the leaves of the plant.
15. Which is an application of biotechnology in agriscience?
- A. Genetic engineering
 - B. Planting seed
 - C. Stem cuttings
 - D. Selective breeding
16. Propagation is defined as:
- A. the union of an egg and sperm.
 - B. the process of increasing the number of a species.
 - C. a cheaper method of producing plants than with seeds.
 - D. the only way to propagate some species and cultivars.
17. The rate at which photosynthesis is carried out depends on the amount of:
- A. nitrogen, phosphorus, and potassium in the water.
 - B. oxygen in the atmosphere.
 - C. respiration carried on during the daylight hours.
 - D. light intensity, temperature, and carbon dioxide.
18. One would likely find peat moss in waterlogged areas called:
- A. bogs.
 - B. creeks.
 - C. pits.
 - D. ponds.

19. The **best** tool to use when pruning small limbs to shape shrubbery is the:
- A. floral scissors.
 - B. pole pruner.
 - C. pruning saw.
 - D. pruning shears.
20. What kind of propagation uses vegetative plant parts to increase the number of plants?
- A. Asexual
 - B. Perlite
 - C. Sexual
 - D. Vermiculite
21. Recombinant DNA technology is also known as:
- A. bovine somatotropin.
 - B. gene-splicing.
 - C. porcine somatotropin.
 - D. X-Gal.
22. The **first** step in the scientific method of problem-solving is to:
- A. collect data.
 - B. draw conclusions.
 - C. identify the problem.
 - D. prepare a written report.

23. DNA is in the shape of a:
- A. single helix.
 - B. single circle.
 - C. double circle.
 - D. double helix.
24. Changing a characteristic by removing and inserting genes into DNA is known as gene:
- A. mapping.
 - B. masking.
 - C. splicing.
 - D. swapping.
25. The purpose of petals in flowers is to:
- A. Attract insects for pollination.
 - B. Support the stamen.
 - C. Store food for young seeds.
 - D. Hide the plant from animals.
26. Where is DNA located in the cell?
- A. Cell wall
 - B. Cytoplasm
 - C. Vacuole
 - D. Nucleus
27. Which is the **most likely** result of genetic manipulation in agriculture?
- A. Increased use of chemical pesticides
 - B. Less use of chemical pesticides
 - C. Lower production of crops and animals
 - D. One cloned species that controls all others

28. One of the **first** commercial products created by genetic engineering was:
- A. artificial sweetener.
 - B. buttermilk.
 - C. insulin.
 - D. synthetic oil.
29. Soil pH affects the availability of:
- A. nutrients in the soil.
 - B. the structure of the soil.
 - C. the land class of the soil.
 - D. microbes in the soil.
30. Antonio is concerned that the photosynthesis process is too slow in his plants because the heat in his greenhouse was cut down by accident. What temperature range will photosynthesis work best in?
- A. 50 to 60 degrees Fahrenheit
 - B. 60 to 70 degrees Fahrenheit
 - C. 65 to 85 degrees Fahrenheit
 - D. 85 to 95 degrees Fahrenheit
31. If a soil pH level is 6.0 and needs to be raised to 7.0, what amendment is **best** incorporated into the soil?
- A. Sulfur
 - B. Sodium
 - C. Lime
 - D. Magnesium

32. The transmission of characteristics from an organism to its offspring through genes in reproductive cells is known as:
- A. progeny.
 - B. traits.
 - C. heredity.
 - D. genetics.
33. Which plant-growing medium is a volcanic ash material?
- A. Peat moss
 - B. Perlite
 - C. Soil
 - D. Vermiculite
34. Which is considered a biotech method of plant propagation?
- A. Cuttings
 - B. Grafting
 - C. Sowing seed
 - D. Tissue culture
35. An example of a plant science career that belongs in any of the plant science areas is:
- A. forage manager.
 - B. entomologist.
 - C. produce manager.
 - D. florist.

36. What type of fertilizer is animal manure?
- A. Complete
 - B. Inorganic
 - C. Lime
 - D. Organic
37. Genetics is known as:
- A. the science of heredity.
 - B. the study of plant biology.
 - C. biochemistry.
 - D. biotechnology.
38. The part of the plant that is responsible for the development of seed is the:
- A. flower.
 - B. stem.
 - C. leaf.
 - D. petiole.
39. Which plant-growing medium is a mineral mica-type material?
- A. Peat moss
 - B. Perlite
 - C. Soil
 - D. Vermiculite
40. Organic fertilizers made from dried and pulverized manure are:
- A. balanced sources of plant nutrients.
 - B. caustic to plants and can cause injury.
 - C. in soluble form and quickly available to plants.
 - D. slow-acting and long-lasting.

41. Sexual reproduction in plants is the propagation of plants by:
- A. Flowers.
 - B. Roots.
 - C. Seeds.
 - D. Stems.
42. Finding and recording the location of genes is called:
- A. matching.
 - B. mapping.
 - C. meshing.
 - D. combining.
43. The primary function of the leaf is to:
- A. support other plant structures.
 - B. produce flowers.
 - C. produce fruit.
 - D. manufacture food for the plant.
44. Which career is involved with plants grown around the home for aesthetic purposes?
- A. Floral designer
 - B. Forester
 - C. Landscaper
 - D. Wholesale florist

45. Which process developed in the 1980s involves moving genetic information between genes?
- A. Genetic engineering
 - B. Phytoremediation
 - C. Biostimulation
 - D. Bioremediation
46. Lime raises the soil pH level so that the soil becomes more:
- A. acidic.
 - B. alkaline.
 - C. eroded.
 - D. porous.
47. When genetic information is moved from one cell to another to change the characteristics of the cell, the procedure is known as genetic:
- A. engineering.
 - B. division.
 - C. mating.
 - D. multiplication.
48. The purpose of a seed coat is to:
- A. Store food.
 - B. Store genetic material.
 - C. Protect the seed.
 - D. Filter light.

49. The primary function of the stem is to:
- A produce flowers.
 - B produce fruit.
 - C anchor the plant.
 - D support other plant structures.
50. Landscape architects are a part of the horticulture industry because they:
- A design landscapes.
 - B plant landscapes.
 - C shoe horses.
 - D treat animals for disease.
51. Sulfur is used to lower soil pH so that the soil will become more:
- A acidic.
 - B alkaline.
 - C eroded.
 - D porous.
52. What components of cells determine the individual characteristics of living things?
- A Genes
 - B Mitochondria
 - C Nucleic cilia
 - D Nucleotides
53. The female part of a flower is called the:
- A pistil.
 - B petal.
 - C anther.
 - D filament.

54. The primary function of the root is to:
- A. make sure that the plant will grow.
 - B. anchor the plant and supply water and nutrients.
 - C. ensure that the plant can be propagated.
 - D. hold up the stem of the plant and provide propagation material.
55. The major types of root systems are:
- A. cell division and fibrous.
 - B. cuttings and root hairs.
 - C. fibrous and root cap.
 - D. fibrous and taproot.
56. The **best** tool to use when joining the woody part of one plant to the woody part of another plant asexually is:
- A. lopping shears.
 - B. a grafting tool.
 - C. a tube cutter.
 - D. pruning shears.
57. Which is a product of genetic engineering related to weed control?
- A. Roundup-ready soybeans
 - B. Bt corn
 - C. High-oleic peanuts
 - D. Delayed-ripening tomatoes

58. What connects the pairs of strands that make up the double helix of DNA?
- A. Bases
 - B. Starches
 - C. Sugars
 - D. Tar
59. What bacteria were genetically engineered to produce insulin?
- A. *E. coli*
 - B. *Salmonella*
 - C. Yeast
 - D. *Listeria*
60. Recombinant DNA technology can **best** be described as involving the:
- A. design of farm equipment through computer imaging.
 - B. implementation of soil conservation practices.
 - C. manipulation of the genetic content of cells.
 - D. study of rock formations using global positioning satellites.
61. What is the **best** tool to cut large branches when pruning shrubs that are hard to reach?
- A. Bush axe
 - B. Lopping shears
 - C. Hedge shears
 - D. Chainsaw

62. A major reason for the manipulation of genes using recombinant DNA technology is to:
- A. eradicate plant and animal species.
 - B. improve plant and animal performance.
 - C. increase the use of pesticides in agriculture.
 - D. monitor the effects of inbreeding.
63. Which has the **most** impact on the availability of nutrients in a soil or plant growing media?
- A. Type of plants grown
 - B. Improper soil or media pH
 - C. Size of container
 - D. Amount of air in the media
64. Which career supplies flowering plants to a florist?
- A. Floral designer
 - B. Forest ranger
 - C. Greenhouse manager
 - D. Landscape architect
65. The propagation method where a plant is separated into smaller parts is:
- A. division.
 - B. grafting.
 - C. air layering.
 - D. tip layering.

66. DNA is an acronym for:
- A. deoxyribonucleic acid.
 - B. dibonucleic acid.
 - C. dynamite alert.
 - D. dioxynucleic acid.
67. Which is true of DNA?
- A. Cannot be duplicated
 - B. Found in all living cells
 - C. Found only in male cells
 - D. Produced only in a test tube
68. What is applied to lower the pH value of soil?
- A. Lime
 - B. Sulfur
 - C. Fertilizer
 - D. Sand
69. In order for a new biotechnology product to be approved, the product must be:
- A. worth at least \$1 million.
 - B. tested to make sure that it is safe.
 - C. able to kill insects.
 - D. affordable to the average consumer.