

**2007 STATE FFA INTRODUCTION TO HORTICULTURE CDE**

Directions for Number s 1- 100 :Read each of the following multiple-choice items and the possible answers carefully. Mark the letter of the correct answer on your answer sheet or as instructed by your teacher. REMEMBER: MAKE NO MARKS ON THIS TEST.

- 1** Maria needs to find recommendations in the *North Carolina Agricultural Chemicals Manual* for chemicals to use, purpose of chemical, rate to use and any special remarks and precautions for using chemicals to control the height of her poinsettias. In which section of the manual's table of contents should she look to find the location of this information?
- A Chemical Application Equipment
  - B Chemical Weed Control
  - C Disease Control
  - D Plant Growth Regulations
- 2** David's neighbor has a large evergreen shrub with many large flowers and dark green leaves with smooth margins. The leaves are about 5" long and 2" wide. He has seen plants similar to this growing in shade beside roads in the mountains of North Carolina. This shrub is a:
- A Bar Harbor Juniper.
  - B Catawba Rhododendron.
  - C Japanese Privet.
  - D River Birch.
- 3** If Krista wants to rapidly increase the amount of a genetically superior plant by placing a growing bud, tip or shoot of the plant on an agar gel in a laboratory with a sterile environment, which biotechnology process would she use?
- A Gene splicing
  - B Layering
  - C Sexual reproduction
  - D Tissue culture
- 4** To get the ideal level of plant production from a commercial greenhouse, the amount and quality of essential environmental factors such as moisture, nutrients, light and temperature must be:
- A Average.
  - B Below average.
  - C Optimum.
  - D Poor.
- 5** Lauren has a tall tree near her home. The deciduous tree has dark green star shaped leaves, and it has many prickly balls or burrs on the ground. What is the common name of this tree?
- A Eastern Red Bud
  - B Eastern White Pine
  - C River Birch
  - D Sweetgum
- 6** Morgan has an old tree near her home. The leaves are large and shiny. It has 6" to 9" white flowers, and it is messy under the tree because of the cone-like pods and bright red seeds. This tree is a:
- A Japanese Privet.
  - B Red Maple.
  - C Southern Magnolia.
  - D Wax Myrtle.

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Spencer has deciduous ground cover that has 3" wide and 7" long leaves that grow in a whorled pattern. Some leaves are solid dark green and some are green with yellowish or white color mixed with green. These plants are:

- A Azalea.
- B Hosta.
- C Impatiens.
- D Wax Begonia.

**8**

Alexis has a large evergreen shrub with yellowish-green leaves about 2" to 3" long with serrated margins near the leaf tips. It has clusters of small waxy-gray berries. This shrub is a:

- A Bar Harbor Juniper.
- B Glossy Abelia.
- C Wax Myrtle.
- D Willow Oak.

**9**

Robin saw some medium sized deciduous shrubs near the school sidewalks. The plants have 1" long leaves, small spines at the leaf nodes and ¼" to ½" red berries. These shrubs are:

- A Helleri Holly.
- B Japanese Barberry.
- C Pin Oak.
- D Prayer Plant.

**10**

The beginning of the food chain for all living things is the process of photosynthesis which takes place in plant:

- A Flowers.
- B Leaves.
- C Roots.
- D Stems.

**11**

Ike needs a simple, relatively inexpensive venturi-type proportioner to mix his concentrated liquid fertilizer in the watering system of his greenhouse. Which of these should he choose?

- A Brass water nozzle
- B Commander proportioner
- C Hozon proportioner
- D Smith proportioner

**12**

An effective disease prevention and control program has to be used with horticultural crops because diseases are common with horticultural crops because moisture and warm temperatures make a favorable:

- A Acidity.
- B Environment.
- C Genetics.
- D Repellant.

**13**

The type of hydroponics system in which the nutrient solution is always running over the plant roots is:

- A Aeroponics.
- B Aggregate culture.
- C Continuous-flow.
- D Nutriculture.

**14**

Lindsey has some plants at her florist that she bought wholesale to sell at Christmas. Most of the flowers are dark red, but she also has some pink and some white ones. The flowers are:

- A Boston Fern.
- B Fosteria Holly.
- C Poinsettia.
- D Spider Plant.

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- 15** What is the common name of an indoor plant with 18" long and ¾" wide leaves with a light greenish line down the midrib of the leaves and has plants developing at the tips of the shoots?
- A English Ivy
  - B Spider Plant
  - C Wax Begonia
  - D Weeping Fig
- 16** Sam found a medium-size deciduous tree that has four trunks or stems with thin sheets of light color bark peeling off each trunk. What is the common name of this tree?
- A Japanese Barberry
  - B Red Maple
  - C River Birch
  - D Sweetgum
- 17** If Gavin wants to move genes from one cell to another to change a plant so that it will be resistant to a certain disease, which biotechnology process would he use?
- A Cloning
  - B Genetic engineering
  - C Seed germination
  - D Tissue culture
- 18** Sandi needs to drill holes about fifteen inches deep, put granular fertilizer in the holes and cover the holes under her peach trees. Which fertilization method does she need to use?
- A Banding
  - B Foliar spraying
  - C Perforating
  - D Sidedressing
- 19** Rebekah selected a very accurate proportioner or injector to mix concentrated liquid fertilizer in the watering system of her greenhouse. Which of these did she select?
- A Commander proportioner
  - B Hozon proportioner
  - C Plastic hose nozzle
  - D Watering can
- 20** Bill uses a fertilizer spreader to cover his entire nursery soil. The fertilization method he is using to spread or apply the granular fertilizer is:
- A Banding.
  - B Broadcasting.
  - C Foliar spraying.
  - D Sidedressing.
- 21** Kendra's soil test report recommends one pound of nitrogen per 1,000 square feet of turfgrass. If her lawn is 32,000 square feet, how many pounds of nitrogen would she use?
- A 1
  - B 5
  - C 32
  - D 1,000
- 22** Mark needs to take some soil samples from his lawn and some from a field where he grows vegetables. Compared to the field samples, his samples from the lawn should be taken:
- A About 2 inches deeper.
  - B About 8 inches deeper.
  - C About 2 inches shallower.
  - D At the same depth.

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**23** To get best results from implementing soil test recommendations, when should Wilber take soil samples if he plans to plant fall vegetable crops?

- A Anytime
- B Fall
- C Spring
- D Winter

**24** Jerry inspected his garden for pests and found small dark-colored soft “plant lice”, a black mold and an unusually high number of ants. Which plant pest does he have?

- A Aphids
- B Beetles
- C Caterpillars
- D Whiteflies

**25** Pam thinks her seedlings have a damping off problem. If this is the problem, what symptoms should she see?

- A Circular black spots on upper leaf surface
- B Rusty growth on upper leaf surface of seedlings
- C Seedlings rotting off at soil level
- D White coating on plant leaves

**26** Lori uses a poisonous gas released into her greenhouse so that the mealy bugs breathe the gas and die. Which type insecticide did she use?

- A Contact poison
- B Fumigant
- C Stomach poison
- D Systemic

**27** The Insect Control section of *the North Carolina Agricultural Chemicals Manual* would be the place to find information about:

- A Calibrating a field sprayer.
- B Diseases of lawns and turf.
- C Lime and fertilizer recommendations.
- D Relative toxicity of pesticides to honey bees.

**28** Robert needs to establish a spray program for his strawberry crop. The section of the *North Carolina Agricultural Chemicals Manual* where he would find that information is:

- A Chemical Weed Control.
- B General Information.
- C Insect and Disease Control of Fruits.
- D Safety and Misuse of Pesticides.

**29** Groups of cells classified according to their origin, structure and physiology are organized to form:

- A Chloroplasts.
- B Plasma membranes.
- C Tissues.
- D Vacuoles.

**30** Extreme overwatering of plants will cause them to drown which is actually caused by:

- A Leaves having too much water for photosynthesis.
- B Plants absorbing too much water.
- C Soil being too soft.
- D Water filling air spaces in soil.

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**31** In the scientific name Ficus elastica 'Decora' which is a Decora Rubber Plant, the word 'Decora' is the:

- A Genus.
- B Kingdom.
- C Species.
- D Variety.

**32** If Lynwood saw a plant with the word "Pinus" in the scientific name, what kind of plant would it be?

- A Maple
- B Pine
- C Oak
- D Sweetgum

**33** A medium size indoor tree that has drooping branches with shiny, pointed dark green leaves and aerial roots on the branches is a:

- A Geranium.
- B Norfolk Island Pine.
- C Swedish Ivy.
- D Weeping Fig.

**34** A deciduous tree with acorns and narrow green leaves that grows about 60 feet high and forty feet wide is a:

- A Flowering Dogwood.
- B Norfolk Island Pine.
- C Sweetgum.
- D Willow Oak.

**35** Wayne has a large deciduous shrub with many bright yellow flowers in very early spring. It is a:

- A Border Forsythia.
- B Mungo Pine.
- C Parlor Ivy.
- D Shasta Daisy.

**36** Marcus has a medium size deciduous shrub with dark green leaves 1" to 2" long that turn a glowing brilliant red in the fall. It is a:

- A Blue Harbor Juniper.
- B Helliery Holly.
- C Spider Plant.
- D Winged Euonymus.

**37** Before they are placed in a rooting hormone, tip cuttings should be dipped in what to prevent rot?

- A Fungicide
- B Insecticide
- C Nematicide
- D Pesticide

**38** Victor wants to join a new variety of pecan tree to some rootstock he has grown from seeds. Which propagation method should he use?

- A Grafting
- B Hardwood cuttings
- C Layering
- D Softwood cuttings

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- 39** Jenny needs to construct some beds to use for rooting azalea cuttings. How deep should the rooting media be?
- A 1 inch
  - B 4 inches
  - C 12 inches
  - D 24 inches
- 40** Debra cut a potato into pieces and planted them to produce new plants. Which propagation method did she use?
- A Air layering
  - B Division
  - C Grafting
  - D Hardening off
- 41** Jeremy needs to graft some small scions to rootstock that is much larger in diameter. Which type of graft should he use?
- A Cleft
  - B Side veneer
  - C Tongue
  - D Whip
- 42** Tissue culture must be done in laboratory conditions that are aseptic which means the environment is:
- A Dirty.
  - B Humid.
  - C Pretty.
  - D Sterile.
- 43** Anna is using foliar spraying to fertilize her petunias. The nutrients she is adding are probably:
- A Macronutrients.
  - B Micronutrients.
  - C Primary nutrients.
  - D Secondary nutrients.
- 44** Since the soil sent to the laboratory is a sample, which of these should Alexis do for a whole field sample?
- A Avoid unusual spots
  - B Sample 12" deep
  - C Sample unusual spots
  - D Take one core or one slice
- 45** Soil test reports use terms such as “low, very high or very low” as well as numbers for parts per million so that the:
- A Computer can read the results.
  - B Plant producer can understand.
  - C Report will be longer.
  - D Soil scientist can use the report.
- 46** The reentry statement on a chemical label states how long you must wait after applying the chemical before:
- A People can enter the treated area.
  - B The pesticide will enter the pest’s body.
  - C The treated pest will come back.
  - D You treat the area again.

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- 47** The applied plant science that studies plants grown for food or beautification is:
- A Agronomy.
  - B Forestry.
  - C Horticulture.
  - D Physics.
- 48** The **MAIN** way to distinguish among the applied plant sciences is the:
- A Location the plants are grown.
  - B Purpose for which plants are grown.
  - C Ratio of monocots to dicots.
  - D Size and colors of plants grown.
- 49** Plants that complete their life cycles in two years are:
- A Annuals.
  - B Biennials.
  - C Centennials.
  - D Perennials.
- 50** Trees that keep their functional leaves throughout the year are:
- A Auxins.
  - B Deciduous.
  - C Evergreen.
  - D Inhibitors.
- 51** In North Carolina, a tree that has no leaves in the winter is:
- A Deciduous.
  - B Evergreen.
  - C Herbaceous.
  - D Turgid.
- 52** The openings or stomates in the lower leaf surface are opened and closed by the:
- A Guard cells.
  - B Lateral buds.
  - C Margins.
  - D Xylem.
- 53** Anchoring plants, storing food and absorbing water are functions of plant:
- A Flowers.
  - B Fruits.
  - C Leaves.
  - D Roots.
- 54** The process of moving synthesized and absorbed food and nutrients within the plant is:
- A Photosynthesis.
  - B Respiration.
  - C Reproduction.
  - D Translocation.
- 55** In the reproductive stage of plant growth, plants:
- A Are dormant.
  - B Are transplanted.
  - C Produce flowers and fruits.
  - D Sprout from seeds.
- 56** Plant roots take water from the soil through the process of:
- A Absorption.
  - B Photosynthesis.
  - C Reproduction.
  - D Respiration.

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- 57** The part of a cell that provides support for the cell is the:
- A Cell wall.
  - B Chloroplast.
  - C Cytoplasm.
  - D Nucleus.
- 58** The stage of vegetative growth when plant cells enlarge is:
- A Cell elongation.
  - B Differentiation.
  - C Diversification.
  - D Specialization.
- 59** The first word in the scientific name of a plant is the:
- A Cultivar.
  - B Genus.
  - C Species.
  - D Variety.
- 60** If Jody wants to learn more about the words used in scientific classification, he would study:
- A French.
  - B Latin.
  - C Russian.
  - D Spanish.
- 61** Rachel has an evergreen ground cover with silvery-blue scale-type leaves. This plant is a:
- A Blue Rug Juniper.
  - B Hosta.
  - C Lirope.
  - D Prayer Plant.
- 62** Temperature, moisture and seed viability are factors that affect:
- A Germination rates.
  - B Hardwood cuttings.
  - C Softwood cuttings.
  - D Tree grafts.
- 63** An advantage of using hormones on cuttings is that their use:
- A Aids in photosynthesis.
  - B Decreases water needs.
  - C Keeps the leaves from dropping.
  - D Speeds root development.
- 64** Which plant part is NOT used in asexual reproduction?
- A Leaf
  - B Petiole
  - C Seed
  - D Stem
- 65** Which propagation will produce the most new plants in the shortest time period?
- A Budding
  - B Cuttings
  - C Grafting
  - D Tissue culture
- 66** Neil is planning to sexually propagate some plants. Which plant parts should he purchase?
- A Leaves
  - B Roots
  - C Seeds
  - D Stems

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**67** If Morgan plans to reuse germination flats, she should:

- A Mix old and new media.
- B Mix old and new plants.
- C Reuse media.
- D Sterilize flats.

**68** Which of these types of growing media is INORGANIC?

- A Bark
- B Compost
- C Peat moss
- D Vermiculite

**69** Which is an **ORGANIC** material used in a growing media?

- A Bark
- B Perlite
- C Styrofoam beads
- D Vermiculite

**70** A typical soil profile has these three layers in this order starting at the soil surface:

- A Bedrock, subsoil and topsoil.
- B Subsoil, topsoil and bedrock.
- C Topsoil, bedrock and subsoil.
- D Topsoil, subsoil and bedrock.

**71** Which is a characteristic of sandy textured soils?

- A High moisture-holding capacity
- B High nutrient-holding capacity
- C Low moisture-holding capacity
- D Small packed together soil particles

**72** The percentage of an ideal soil that is made up of solid soil particles is about:

- A 5.
- B 20.
- C 50.
- D 90.

**73** Which elements do plants need in the smallest amounts?

- A Macronutrients
- B Micronutrients
- C Primary elements
- D Secondary elements

**74** The three primary nutrients necessary for plant growth are:

- A Boron, calcium and iron.
- B Chlorine, sulfur and zinc.
- C Magnesium, manganese and molybdenum.
- D Nitrogen, phosphorus and potassium.

**75** Which of these nutrients do plants need in the greatest quantity?

- A Calcium
- B Nitrogen
- C Sulfur
- D Zinc

**76** When a plant has yellow leaves caused by a nutrient deficiency, the condition is called:

- A Chlorosis.
- B Defoliation.
- C Necrosis.
- D Respiration.

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- 77** The analysis of a fertilizer shows the percent by weight of:
- A Boron, calcium and water.
  - B Carbon, hydrogen and oxygen.
  - C Nitrogen, phosphorus and potassium.
  - D Zinc, sulfur and iron.
- 78** Which is the analysis of an incomplete fertilizer?
- A 5-10-10
  - B 10-10-10
  - C 15-0-14
  - D 20-10-20
- 79** Actual amounts of nutrient elements available are reported on a soil test report in:
- A Ounces.
  - B Parts per hundred.
  - C Parts per million.
  - D Pounds.
- 80** When insects are worms or caterpillars, what is their stage of development?
- A Adult
  - B Egg
  - C Fly
  - D Larva
- 81** Bacteria, fungi and viruses that cause plant diseases are infectious:
- A Insects.
  - B Parasites.
  - C Pathogens.
  - D Pesticides.

- 82** The **MOST** effective chemical control for chewing insects is:
- A Contact poisons.
  - B Herbicides.
  - C Nematicides.
  - D Stomach poisons.
- 83** If the chemical label has the word **POISON**, it will also have this symbol:
- A Red flag.
  - B Skull and crossbones.
  - C Stop sign.
  - D Yield sign.
- 84** The green color of leaves is caused by the:
- A Chloroplasts.
  - B Epidermis.
  - C Guard cells.
  - D Margin.
- 85** The edge of a leaf is the:
- A Margin.
  - B Midrib.
  - C Terminal bud.
  - D Veins.
- 86** The primary function of fruit is to:
- A Absorb water and nutrients from soil.
  - B Carry, nourish and protect seeds.
  - C Connect roots to leaves.
  - D Manufacture food for the plant.

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- 87** The byproduct of photosynthesis is:
- A Carbon dioxide.
  - B Nitrogen.
  - C Oxygen.
  - D Water.
- 88** Seedlings that receive too little light will have:
- A Brighter flower colors.
  - B Dark green leaves.
  - C Short thick stems.
  - D Tall slender stems.
- 89** The scientific name for an azalea is:
- A *Cornus florida*.
  - B *Fiscus benamina*.
  - C *Rhodendron kiusianum*.
  - D *Saintpaulia ionantha*.
- 90** In a scientific name, cv. means:
- A Center vein.
  - B Color variegated.
  - C Century five.
  - D Cultivar.
- 91** Benefits of biotechnology include:
- A Lower paying jobs in laboratories.
  - B More expensive plants.
  - C More powerful herbicides.
  - D Plants with more disease resistance.
- 92** Mulch means to:
- A Cover a soil.
  - B Cultivate a soil.
  - C Fumigate a soil.
  - D Put chemicals in a soil.
- 93** Perlite affects growing media by:
- A Decreasing drainage.
  - B Increasing drainage.
  - C Increasing weight.
  - D Making acid.
- 94** Clayey textured soils are characterized by:
- A Being loose and single grain.
  - B Having high moisture-holding capacity.
  - C Having large soil particles.
  - D Having low moisture-holding capacity.
- 95** Neutral on the pH scale is:
- A 3.
  - B 5.
  - C 7.
  - D 9.
- 96** Which of these groups are micronutrients?
- A Carbon, hydrogen and oxygen
  - B Copper, manganese and zinc
  - C Nitrogen, phosphorus and potassium
  - D Sulfur, magnesium and water

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- 97** An advantage of organic fertilizer is that it:
- A** Improves the physical condition of soil.
  - B** Is sterile.
  - C** Leaches quickly through the soil.
  - D** Releases into the soil rapidly.

- 98** Most commercial chemical fertilizers are:
- A** Animal matter fertilizers.
  - B** Incomplete fertilizers.
  - C** Inorganic fertilizers.
  - D** Organic fertilizers.

- 99** A soil test report will include:
- A** Cost of fertilizer.
  - B** Cost of lime.
  - C** Recommended planting time.
  - D** Suggested fertilizer rate.

- 100** Insects have:
- A** 2 body sections.
  - B** 6 legs.
  - C** 8 legs.
  - D** No wings.