

2004 STATE FFA AGRICULTURAL MECHANICS WRITTEN EXAMINATION

Student Name _____ Score _____

Chapter _____ Student Number _____

Directions: Choose the correct answer and write the letter for your answer in the blank.

- ___ 1. The minimum number of hack saw teeth that should be in contact with the metal being cut is:
- a. 1.
 - b. 3.
 - c. 9.
 - d. 12.
- ___ 2. The types of pipe fittings used to connect pipes of different sizes are:
- a. Adapters and caps.
 - b. Bushings and reducers.
 - c. Couplings and plugs.
 - d. Elbows and unions.
- ___ 3. The fine aggregate used in concrete is::
- a. Clay.
 - b. Rocks.
 - c. Sand.
 - d. Silt.
- ___ 4. The point of a high carbon drill bit should be sharpened by:
- a. Filing.
 - b. Grinding.
 - c. Sanding.
 - d. Welding
- ___ 5. If a board is measured and marked accurately, sawing out the line makes it:
- a. Accurate.
 - b. Too large.
 - c. Too small.
 - d. Too thick.
- ___ 6. To carry the same load in amps as copper wire, aluminum wire must be:
- a. One size larger.
 - b. One size smaller.
 - c. The same size
 - d. Two sizes smaller.

- ___ 7. When compared to select grades of lumber, common grades have:
- No knots.
 - Equal amount of knots.
 - Fewer knots.
 - More knots.
- ___ 8. If the sparks from a metal test are red lines, the metal is:
- Cast iron.
 - High carbon steel.
 - Stainless steel.
 - Wrought iron.
- ___ 9. The amount of electricity used in a month is measured by a:
- Fuse.
 - Meter.
 - Receptacle.
 - Switch.
- ___ 10. What is the first thing that should be done to metal before it is bent, cut, drilled, or filed?
- Cooled
 - Heated
 - Identified
 - Painted.
- ___ 11. When compared to machinery repairs, maintenance is:
- About the same cost.
 - Less costly.
 - More costly.
 - Twice as costly.
- ___ 12. The major reason for changing oil and filters in tractors is to protect the internal engine parts from:
- Dirt.
 - Fuel.
 - Old oil.
 - Water.
- ___ 13. Pipe friction loss decreases when water capacity decreases, when pipe length decreases, or when the:
- Pipe diameter decreases.
 - Pipe diameter increases.
 - Water has chlorine added.
 - Water is pure.

- ___ 14. Submersible pumps are easy to install and efficient, but their use is limited to:
- Deep wells.
 - Shallow wells.
 - Wells at least 4" in diameter.
 - Wells at least 8" in diameter.
- ___ 15. Target rods used with tripod levels are graduated in:
- Feet, inches, and 1/16 inches.
 - Feet, inches, and 1/2 inches.
 - Feet, tenths, and hundredths.
 - Yards, feet, and inches.
- ___ 16. The most important step in setting up a farm level is:
- Clean the lens.
 - Level the instrument.
 - Measure the distance to the rod.
 - Set tripod legs 3' apart.
- ___ 17. To improve safety and quality of work, tools used for cutting should be:
- Dull.
 - New.
 - Old.
 - Sharp.
- ___ 18. Compared to repairs and renovations, the ratio of labor to materials for new construction is:
- About the same.
 - Higher.
 - Lower.
 - Zero.
- ___ 19. The most important factor to consider when planning construction of a machinery shelter is the:
- Brand of metal.
 - Color of shelter.
 - Cost of shelter.
 - Slope of roof.
- ___ 20. Most large swine producers in North Carolina wash animal wastes into a:
- Ditch.
 - Fish Pond.
 - Lagoon.
 - Septic Tank.

- ___ 21. The Land Capability Class with the most limitations to its use is:
- I.
 - II.
 - VI.
 - VIII.
- ___ 22. Before storing lawnmowers, chain saws, tractors or other gasoline engines more than three months, the fuel tanks, lines and carburetors should be drained to:
- Keep gasoline from getting old.
 - Prevent gumming up.
 - Prevent loss of gasoline.
 - Use the fuel in other machinery.
- ___ 23. A major DISADVANTAGE of center-pivot sprinkler irrigation is:
- Corners of square fields get no water.
 - Corners of square fields get too much water.
 - Operation costs are high.
 - Water-use efficiency is low.
- ___ 24. The two factors that determine the amount of water to be applied during irrigation are:
- Land class and slope.
 - Rooting depth and soil texture.
 - Soil pH and fertility.
 - Soil thickness and color.
- ___ 25. Which two variables that affect soil erosion are most controlled by the person managing the land?
- Cover and support practices
 - Slope and rainfall runoff
 - Soil erodability and slope
 - Support practices and rainfall
- ___ 26. Construction of a rigid-frame building should start with the:
- Concrete floor.
 - Metal roof.
 - Steel frames.
 - Windows and doors.
- ___ 27. For both diesel and gasoline engines, the greatest efficiency on a heavy load is when the speed control or fuel lever is:
- Completely closed.
 - Completely open.
 - One-half open.
 - One-third open.

- ___ 28. What are the two most commonly use general purpose electrodes?
- E6011 and E 6013
 - E6020 and E 6024
 - E7020 and E7028
 - E7084 and E8015
- ___ 29. In the safety color code, fire fighting equipment is designated by:
- Green.
 - Red.
 - White.
 - Yellow.
- ___ 30. A gasoline fire is a Class B fire because the fuel is a:
- Combustible metal.
 - Flammable liquid.
 - Noncombustible solid.
 - Nonflammable liquid.
- ___ 31. Which device is used in agricultural buildings to control moisture?
- Carbon dioxide meter
 - Humidistat
 - Photocell
 - Thermostat
- ___ 32. What test is used to check engines for worn or damaged piston rings or leaking head gasket?
- Compression
 - Fuel
 - RPM
 - Spark
- ___ 33. The major purpose of engine maintenance is to keep the inside of the engine:
- Clean.
 - Cool.
 - Hot.
 - Oiled.
- ___ 34. A wood structure that will be exposed to the weather should be made of treated wood or should be painted to:
- Add beauty.
 - Increase strength.
 - Reduce decay.
 - Reduce strength.

- ___ 35. What is the grade for exterior plywood with the best available grade for the face ply and lowest available grade for the back layer?
- A-A
 - A-B
 - A-C
 - C-D
- ___ 36. The state of being free from danger, risk, or injury is:
- Accidental.
 - Awareness.
 - First aid.
 - Safety.
- ___ 37. Which type of nail is recommended for framing buildings?
- Box
 - Common
 - Double headed
 - Finishing
- ___ 38. What type switch controls a light from two different locations?
- One-way
 - Two-way
 - Three-way
 - Four-way
- ___ 39. The two deadly hazards associated with electric current are:
- Bruises and cuts.
 - Cancer and strokes.
 - Fire and shock.
 - Light and darkness.
- ___ 40. What wire size will carry the most amps?
- 4.
 - 8.
 - 10.
 - 12.
- ___ 41. Pipe size is usually identified by the:
- Inside diameter.
 - Length.
 - Outside diameter.
 - Thickness.

- ___ 42. What type pipe has the advantages of low purchase cost and ease of installation?
- Cast iron
 - Copper
 - Plastic
 - Steel
- ___ 43. Curing concrete helps it:
- Dry quickly.
 - Dry slowly.
 - Freeze.
 - Remain wet.
- ___ 44. Compared to using screws to connect electrical wires, the amount of insulation that should be removed when connecting with wire nuts is:
- 1/8 inch less.
 - 1/8 inch more.
 - 1 inch less.
 - 1 inch more.
- ___ 45. The bare or green wire in nonmetallic sheathed cable stamped "12-3 w/g" is the:
- Ground.
 - Hot.
 - Largest.
 - Longest.
- ___ 46. A carbonizing flame on the oxyacetylene torch is made by using more:
- Acetylene.
 - Iron.
 - Oxygen.
 - Water.
- ___ 47. A dressed or planed 2 X 6 board is actually:
- 1 1/2 inches by 5 1/2 inches.
 - 1 1/2 inches by 6 inches.
 - 2 inches by 5 7/8 inches.
 - 2 inches by 6 inches.
- ___ 48. The slope of a roof is the:
- Pitch.
 - Rise.
 - Run.
 - Ventilation.

- ___ 49. Accidents that happen to farm people most often involve:
- a. Burns.
 - b. Falls.
 - c. Livestock.
 - d. Machinery.
- ___ 50. The factor that most affects safety in an agricultural mechanics shop is the:
- a. Cost of the tools.
 - b. People who use the shop.
 - c. Safety color codes.
 - d. Safety rules displayed.