

2018 - 2019 Ag Mechanics CDE – Description Sheet

Written Exam: 20 problem solving/multiple choice questions – 4 from each event area

Team Activity: - Calculating Bills of Materials

Area Information - Students will need to be familiar with measuring, calculating bills of material, and planning construction of a wood fabrication project.

State Information – Wood Fabrication: Students will work as a team to construct a wood project following provided wood working plans. Students will need to calculate a purchasing bill of materials and a cutting list of materials needed to fabricate the project.

FY19 Team Activity Tools

Teams advancing to the State CDE will need to bring:

Compound Miter Saw – stand optional

Measuring Tapes

Square – (Framing Square, Speed Square, Combination Square etc.)

Minimum 18” clamp (bar, pipe, quick grip, etc.)

Pencil

Cordless Drill

Drill Bits – Size TBD

Countersink Bit

#2 Phillips Screwdriver

Flat Head Screwdriver

Center Punch

Safety Glasses for each team member

Hearing protection for each team member

Skill Activities:

A. Machinery and Equipment:

Area Information New Holland, Workmaster Series 35/40 Tractor Operator’s Manual (available on the Ag. Ed website under Ag. Mechanics reference manuals). Students should be familiar with:

- Section 7- Maintenance, fuel and lubricant requirements
- Section 9 - Specifications
- API Service specifications

State Information New Holland, Workmaster Series 35/40 T4B 2017 Tractor Operator’s Manual (available on the Ag. Ed website under Ag. Mechanics reference manuals). Students should be familiar with:

- Section 3 - Controls and Instruments
- Section 7 - Maintenance
- Section 8 - Troubleshooting
- Section 9 - Specifications

B. Electrical Systems

Necessary tools will be provided. You may bring colored pencils for use on drawing diagrams.

Area and State Information – No more than 3 boxes will be mounted to 2” x 4” boards. The contestant will make hooks and secure the wires to the correct locations, but will not cut wire. Connections to boxes and connection of devices inside the box must be made according to NEC recommendations and accepted wiring practices (AAVIM)

The contestant will be required to:

- correctly wire devices and service entrance panels
- select appropriate overcurrent protection
- identify/select conductors/cables
- correctly bond all devices and boxes
- answer problem solving questions pertaining to the circuit

Connections to boxes and connection of devices inside the box must be made according to NEC recommendations and accepted wiring practices (AAVIM)

C. Compact Equipment

Area and State Information

Briggs and Stratton model # 12S432 OHV Engine

Briggs & Stratton OHV Air Cooled Engine Manual, sections 1, 6 & 9

D. Environmental and Natural Resources:

Area and State Information

Students should be able:

- To take rod readings
- Measure distance with tape and/or instruments
- Determine percent of slope or grade
- Determine land area in acres
- Use measurements to determine cubic volume of fill dirt or concrete

References:

- Website – Curriculum and SAE – Curriculum – High School Curriculum – Agriculture Mechanics – Agricultural Mechanics Systems – Agricultural Mechanics Technology II – Videos – Using Stadia Hairs to Determine Distance

E. Structures:

Regional/Area/State Information

Welding Skill will be GMAW

Welding may be required as any one of the following types of welding joints: Butt, Tee, Lap, or Pipe

Welds will be required on 1/8” up to 1/4” x 4” x 5” flat metal, metal pipe, or a combination.

Welds may be single or multiple pass.

Welding Equipment List for Contestants:

1. Teams will be penalized under “Safety” on score sheet for not having the following items:

Welding Helmet – Shade 10 minimum

Body cover- leathers, Shop Jackets, non-flammable Coveralls

Welding Gloves

Pliers/Tongs

Safety glasses –approved with shields

Wire brush

Soapstone

Chipping Hammer

2. Please do not share tools and equipment between team members (bring one of each for each student).
3. All other materials and tools will be provided.

Approved Safety Glasses are required for Team Activity and Skill Activities. (Meets or exceeds ANSI Z87.1-2003 safety standards.)