

MASSACHUSETTS VOCATIONAL TECHNICAL TEACHER TESTING PROGRAM

SCOPE OF TEST CODE # 1 - AGRICULTURAL MECHANICS

WRITTEN EXAM - 100 QUESTIONS

TIME ALLOWED: 3 HOURS

PERCENT OF TEST:

10% Agricultural Mechanics Health & Safety

2% Agricultural Mechanics Tools and Equipment

30% Agricultural Machinery and Equipment

- Small Engines
- Tractors
- Fuel Systems
- Transmissions and Clutch
- Charging and Ignition Systems
- Gasoline and Diesel Engines

30% Construction Repair and Maintenance

- Carpentry
- Hand and Power Tools
- Masonry

25% Metal Work

- Arc SMAW, GMAW, GTAW and FCAW Welding
- Manipulation of Hot and Cold Materials

3% Irrigation Systems

- Fundamentals
- Plumbing

THE INTENT OF THIS EXAM IS TO ASSESS YOUR ABILITY TO TEACH THE SKILLS FOUND IN THE MASSACHUSETTS VOCATIONAL TECHNICAL EDUCATION FRAMEWORK. ALL EXAMS ARE ALIGNED WITH THE MATCHING FRAMEWORK.

SOME QUESTIONS REQUIRE A SYNTHESIS OF KNOWLEDGE BASED ON EXPERIENCE IN THE FIELD AND MAY NOT BE FOUND IN ANY BOOK. HOWEVER, **CANDIDATES ARE ENCOURAGED TO PREPARE FOR THEIR EXAMS BY REVIEWING TEXTBOOKS AND REFERENCE MATERIAL WHICH HAS BEEN LISTED AS PART OF THIS EXAM OUTLINE. THESE RESOURCES CAN BE FOUND USING ONLINE SEARCH TOOLS, ONLINE VENDORS AND WEBSITES. CONTACT THE VOCATIONAL TECHNICAL TEACHER TESTING OFFICE IF YOU NEED FURTHER ASSISTANCE IN LOCATING RESOURCES LISTED IN THE EXAM OUTLINE. USE THE EXAM OUTLINE AND THE MA VOCATIONAL TECHNICAL EDUCATION FRAMEWORKS TO FOCUS YOUR PREPARATION FOR THE EXAM.**

You may refer to <http://www.doe.mass.edu/ccte/cvte/> for the Massachusetts Vocational Technical Educator Frameworks.

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THE FOLLOWING LIST OF REFERENCE MATERIALS WAS DEVELOPED AS A GUIDE FOR WRITTEN EXAM CANDIDATES:

Agricultural Mechanics and Technology Systems by J. P. Hancock, Don W. Edgar, Michael L. Pate, Lori A Dyer, and W. Brian Hoover
Goodheart-Willcox

Diesel Technology by John "Drew" Corinchock and Andrew Norman
Goodheart-Willcox

Small Engines by R. Bruce Radcliff
American Technical Pub

The written exam consists of 100 multiple choice questions. Each question consists of one incomplete sentence or a questions followed by four choices. Listed below are several sample items:

1. What should you look for to determine if a tractor is gasoline or diesel powered?
 - a. tractors built after 1978 are all diesel
 - b. diesel tractors have two or fours carburetors while gas tractors have only one
 - * c. diesel tractors do not have a carburetor or spark plugs
 - d. the mufflers on diesels are always vertical and gas tractor mufflers are always horizontal

2. Standard concrete blocks are normally laid with a mortar join that is _____ inch thick.
 - a. 1/8
 - * b. 3/8
 - c. 1/2
 - d. 5/8

* indicates correct answer

THE TEACHER TESTING PROGRAM WILL PROVIDE NON-PROGRAMMABLE CALCULATORS FOR USE IN COMPLETING THE WRITTEN EXAM. DOCUMENTATION REGARDING THESE CALCULATORS WILL BE INCLUDED IN YOUR ADMISSION PACKAGE.

MASSACHUSETTS VOCATIONAL TECHNICAL TEACHER TESTING PROGRAM

SCOPE OF TEST CODE # 1 - AGRICULTURAL MECHANICS

PERFORMANCE EXAM

TIME ALLOWED: 4 HOURS

PERCENT OF TEST:

20% Grind Valves and Seats in a Small Engine

- Set Up Equipment
- Remove Valves
- Clean Valves And Ports
- Grind Valves And Seats
- Replace Valves
- Adjust Valves
- Test Run Engine
- Follow Safety Standards

20% Time and Replace a Battery Type Distributor on a Large Tractor

- Time Engine
- Install Distributor
- Determine Firing Order
- Start & Time Engine With Timing Light
- Follow Safety Standards

10% Cut a Piece of Metal with Acetylene Torch

- Adjust Torch
- Cut Metal Accurately & Cleanly
- Close Tanks & Bleed Gauges
- Follow Safety Standards

10% Weld Metal Sections with Electric Arc/GMAW (MIG)

- Prepare Metal
- Adjust Machine
- Select Rod
- Perform Horizontal, Vertical or Butt Weld
- Follow Safety Standards

20% Construct Electrical Circuit

- Construct a Basic Electrical Circuit Using a 5 Pin Bosch Relay

20% Cut a Rafter or Stair Stringer to Specification

- Layout Rafter or Stair Stringer
- Cut Rafter or Stair Stringer
- Follow Safety Standards
- Demonstrate Industry and Professional Use of Skill Saw

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PERFORMANCE EXAM CANDIDATES WILL BE ASSESSED ON THEIR COMPLETION OF THE EXAM TASKS AND THEIR DEMONSTRATION OF INDUSTRY AND OSHA RECOMMENDED SAFETY PROCEDURES.

MOST TASKS REQUIRE A SYNTHESIS OF KNOWLEDGE BASED ON EXPERIENCE IN THE FIELD AND MAY NOT BE FOUND IN ANY BOOK. HOWEVER, **CANDIDATES ARE ENCOURAGED TO PREPARE FOR THEIR EXAMS BY REVIEWING TEXTBOOKS AND REFERENCE MATERIAL WHICH HAS BEEN LISTED AS PART OF THIS EXAM OUTLINE. THESE RESOURCES CAN BE FOUND USING ONLINE SEARCH TOOLS, ONLINE VENDORS AND WEBSITES. CONTACT THE VOCATIONAL TECHNICAL TEACHER TESTING OFFICE IF YOU NEED FURTHER ASSISTANCE IN LOCATING RESOURCES LISTED IN THE EXAM OUTLINE. USE THE EXAM OUTLINE AND THE MA VOCATIONAL TECHNICAL EDUCATION FRAMEWORKS TO FOCUS YOUR PREPARATION FOR THE EXAM.**

TOOLS & EQUIPMENT CANDIDATE MUST BRING:

Safety Glasses Must Be Worn At All Times

Appropriate Working Attire - Work Shoes

Long Hair Is To Be Restrained

Pen and/or Pencil

ALL NECESSARY TOOLS AND SUPPLIES NEEDED TO PERFORM TASK WILL BE PROVIDED. EAR PROTECTION WILL BE AVAILABLE.

ADDITIONAL NOTES

Candidate may leave if test is completed prior to 4 hours.

A break will be allowed.

SAFETY RULES ARE EXPECTED TO BE INDUSTRIAL STANDARDS.
IF NOT OBSERVED, EXAMINER WILL STOP THE TEST AT THAT AREA OF TESTING.

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CANDIDATES ARE REMINDED THAT THE USE OF A CALCULATOR IS ALLOWED FOR THE PERFORMANCE EXAM PROVIDING YOU BRING YOUR OWN.