

2.1 Identify the following ten basic components or systems of the tractor and briefly explain their functions.

- Engine
- Fuel system
- Cooling system
- Electrical system
- Hydraulic system
- Transmission
- Operator station (ROPS/cab)
- Hitching system
- Traction system (tires and tracks)
- Operator's instructions (operator's manual, warnings)

2.2 Locate and interpret the appropriate section of the operator's manual that explains the use and function of primary controls found on agricultural tractors and self-propelled equipment.

2.3 Locate and explain the function of each of the primary controls found on typical agricultural tractors and self-propelled equipment, including:

- Brakes
- Steering wheel
- Throttle
- Clutch
- Transmission selector
- Parking brake
- Auto steer
- Turn signals
- PTO-engaging control
- Hydraulic controls
- Windshield wipers
- Battery disconnect switch
- Fuel tank shut-off valve
- Hazard lights

- Fuel shut off – mechanical
- Fuel shut off – electrical
- Lights
- Window defroster
- Horn

2.4 Explain the reason for using color-coding on primary controls found on agricultural tractors and self-propelled equipment.

2.5 Identify the following applications of color-coding used in a typical operator station.

- Red – controls that stop engine
- Orange – controls that control machine ground motion such as engine speed and transmission levers
- Yellow – controls that engage powered components including the PTO
- Black – controls that adjust machine function

2.6 Locate the appropriate section of the operator's manual that explains the instruments and their functions, and explain the proper responses to abnormal readings.

2.7 Identify, locate, and explain the function of each of the following instruments found on typical tractors and self-propelled equipment.

- Tachometer
- Oil-pressure gauge/light
- Battery-charge indicator
- Temperature gauge/light

2.8 Recognize and interpret the following audible and visual messages that might be encountered on modern agricultural tractors, combines, other self-propelled equipment, and trucks.

- PTO-engagement warning
- Back-up warning devices
- Warning/hazard lights indicator
- Turn signals
- Seat belt warning
- Parking-brake-engaged warning

2.9 Explain the reasons for the use of universal symbols on agricultural tractors and machinery.

- Enable people to communicate
- Save time
- Prevent incidents that could cause property damage
- Reduce risk of injury
- Remove language barriers

2.10 Locate and interpret the use of specific universal symbols found on agricultural tractors and machinery using the operator's manual.

2.11 Identify and briefly explain the function of typical safety features found on modern agricultural tractors, including:

- Neutral-start switches
- Field and highway lighting
- ROPS
- Seat belt
- Power steering and brakes
- Safety signs
- Ergonomically designed seat and control layout
- Standardized controls
- Slip-resistant surfaces
- Mirrors and cameras
- Handholds and steps
- Climate control with air filtration

2.12 Explain the importance of being able to use and interpret standard hand signals when working around agricultural equipment.

- Enable people to communicate
- Save time
- Prevent incidents that could cause property damage
- Reduce risk of severe injury or death
- Remove language barriers

2.13 Explain the message associated with each of the following commonly used hand signals.

- Start engine
- Stop engine
- Come to me or come help
- Move toward me or follow me
- Move out or take off
- Speed up
- This far to go
- Slow down
- Lower equipment
- Raise equipment
- Stop