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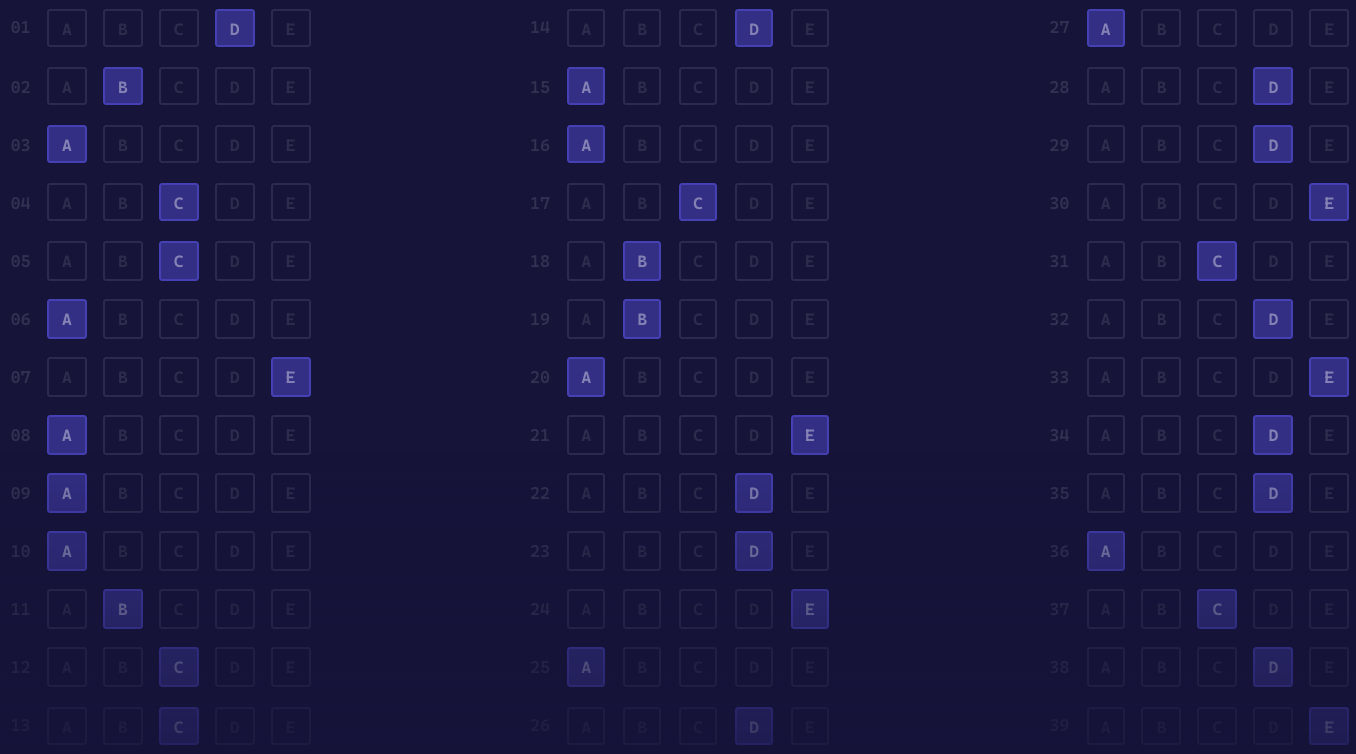

PRACTICE QUESTIONS

Technical Standards and Safety Authority (TSSA)

OBAT

Oil Burner Activation Technician

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

Before you begin

What this is

9 practice questions for Technical Standards and Safety Authority (TSSA) `OBAT`, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, `OBAT`
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

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QUESTION 1 SINGLE CHOICE

Which component of an oil burner is responsible for atomizing the fuel oil into a fine spray before combustion?

A Ignition transformer

B Nozzle / atomizing assembly

C Cad cell flame sensor

D Circulator pump

ANSWER B

WHY The nozzle (or atomizing assembly) is the component that breaks the fuel oil into a fine, uniform spray so it can mix properly with air and burn efficiently. The ignition transformer provides the high-voltage spark, the cad cell senses flame, and the circulator pump moves hot water through the system — none of these atomize the fuel.

QUESTION 2 SINGLE CHOICE

During the normal start-up sequence of an oil burner, which event occurs immediately after the burner motor starts and before ignition is established?

A The thermostat immediately energizes the ignition transformer

B The fuel solenoid opens and the cad cell establishes flame

C The combustion air blower (if equipped) and oil pump purge the line, followed by ignition

D The circulator pump energizes to verify flow before ignition

ANSWER C

WHY In a typical oil burner sequence, after the call for heat closes, the burner motor starts, which drives the oil pump and the combustion air blower. Any residual oil in the nozzle line is purged, then the ignition transformer is energized to ignite the spray. The thermostat does not bypass the purge/air proving steps, the cad cell cannot sense flame before fuel is ignited, and the circulator is not the first verification step on the burner itself.

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QUESTION 3 SINGLE CHOICE

A residential oil-fired boiler ignites, runs for a short time, then locks out on safety. Inspection shows a soot-covered cad cell and a yellow, smoky flame. The most likely root cause is:

A A failed thermostat calling for heat intermittently

B Insufficient combustion air and/or a dirty/clogged nozzle causing incomplete combustion

C An open high-limit aquastat circuit

D A reversing polarity condition at the burner transformer

ANSWER B

WHY A yellow, smoky flame combined with a soot-covered cad cell is the classic signature of incomplete combustion, which is most commonly caused by insufficient combustion air or a worn/dirty nozzle producing a poor spray pattern. The cad cell then cannot reliably see flame and the primary control locks out. An intermittent thermostat, an open high limit, or reversed polarity would not by themselves produce soot and a yellow flame.

QUESTION 4 SINGLE CHOICE

Under TSSA requirements for oil-burning equipment, an oil supply tank must be equipped with a vent pipe that terminates in a specific manner. Which termination requirement applies?

A The vent must terminate inside the building at least 1 m above the floor

B The vent must terminate outside the building, away from openings, with a weatherproof cap or screen

C The vent must connect directly into the flue of the appliance

D The vent must terminate inside a sealed metal box near the burner

ANSWER B

WHY Oil tank vent pipes must terminate outside the building so any vapours are safely dispersed to atmosphere. The termination must be located away from building openings and fitted with a weatherproof cap or screen to keep debris, snow, rain and insects out. Terminating the vent inside, into the flue, or inside a sealed box would create a vapour hazard or back-pressure issue and does not meet the code.

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QUESTION 5 SINGLE CHOICE

When commissioning a newly installed oil burner, which of the following checks must be completed BEFORE the first firing of the burner?

A Adjust the barometric draft regulator while the burner is running

B **Verify the chimney/vent is clear, the tank and piping are filled and leak-tested, and the appliance is wired per the manufacturer and code**

C Measure stack temperature and CO in flue gases at high fire

D Clean the cad cell eye with solvent

ANSWER **B**

WHY Pre-firing checks focus on safety prerequisites: a clear chimney/vent, a leak-free and primed oil supply, and correct electrical wiring per manufacturer instructions and the applicable code. Stack temperature, CO and combustion efficiency are measured during/after the first firing, and draft regulator adjustment is part of commissioning the running burner, not a pre-fire check.

QUESTION 6 SINGLE CHOICE

During a combustion efficiency test on a residential oil-fired appliance, the technician measures a high stack temperature and elevated oxygen level, but CO is near zero. These readings most likely indicate:

A Incomplete combustion from insufficient air

B **Excess combustion air causing heat loss up the stack**

C A cracked heat exchanger pulling air into the flue

D Normal, efficient operation with no adjustment required

ANSWER **B**

WHY High O2 plus high stack temperature with negligible CO is the signature of excess combustion air: too much air dilutes the flame, reduces flue gas temperature efficiency and carries heat out the stack without producing dangerous CO. Insufficient air would show low O2 and elevated CO; a cracked heat exchanger would typically produce unusual O2 and CO readings and other symptoms; normal efficient operation would show moderate O2 and a lower stack temperature.

QUESTION 7 SINGLE CHOICE

The primary safety function of the cad cell (cadmium sulfide flame sensor) in an oil burner primary control is to:

A Regulate the firing rate based on temperature

B **Prove the presence of flame and lock out the burner if flame is not established within the trial-for-ignition period**

C Modulate the combustion air damper for efficiency

D Sense stack temperature and shut the burner down on overheat

ANSWER B

WHY The cad cell is a flame-proving device. During the trial-for-ignition period, the primary control energizes the burner and waits to 'see' flame via the cad cell. If flame is not proven within the allowed time, the control locks out to prevent unburned oil from accumulating in the combustion chamber. It does not regulate firing rate, modulate air, or sense stack temperature — those are handled by other devices.

QUESTION 8 SINGLE CHOICE

A residential oil storage tank is being installed in a basement. Which requirement applies to the oil line between the tank and the burner?

A The line must be rigid copper tubing with soldered joints

B **The line must be a single continuous run of approved fuel-oil-resistant tubing or pipe, properly supported, with a shut-off valve at the tank and a filter near the burner**

C The line may use any plastic pipe as long as it is concealed in the wall

D The line may be run without a filter if a fusible link is installed on the nozzle

ANSWER B

WHY Fuel oil lines must be approved for oil service, continuously supported, and include a shut-off valve at the tank and an oil filter near the burner to protect the nozzle and pump. Rigid copper with soldered joints is not acceptable because solder can be attacked by fuel oil; any concealed plastic pipe is not approved for this service; and a fusible link is a fire safety device, not a substitute for filtration.

QUESTION 9 MULTIPLE CHOICE

A technician is servicing an oil burner that has been shut down and locked out. Which of the following actions are required as part of safe work practice? (Choose two.)

A Verify the oil supply valve is closed and the system is depressurized before opening the fuel line

B Test the combustion chamber and flue for combustible vapours/gases before introducing an ignition source

C Smell the flue gases to determine combustion quality because instruments are not required

D Wear appropriate PPE and ensure adequate ventilation in the work area

ANSWER B · D

WHY Safe servicing of an oil burner requires verifying a safe atmosphere (no combustible vapours or residual fuel in the chamber/flue before lighting or applying an ignition source) and using appropriate PPE with adequate ventilation. Closing and depressurizing the fuel line is good practice but is not among the listed options; relying on smell instead of combustion analysis instruments is unsafe and not an accepted practice on a TSSA-credentialed service call.

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