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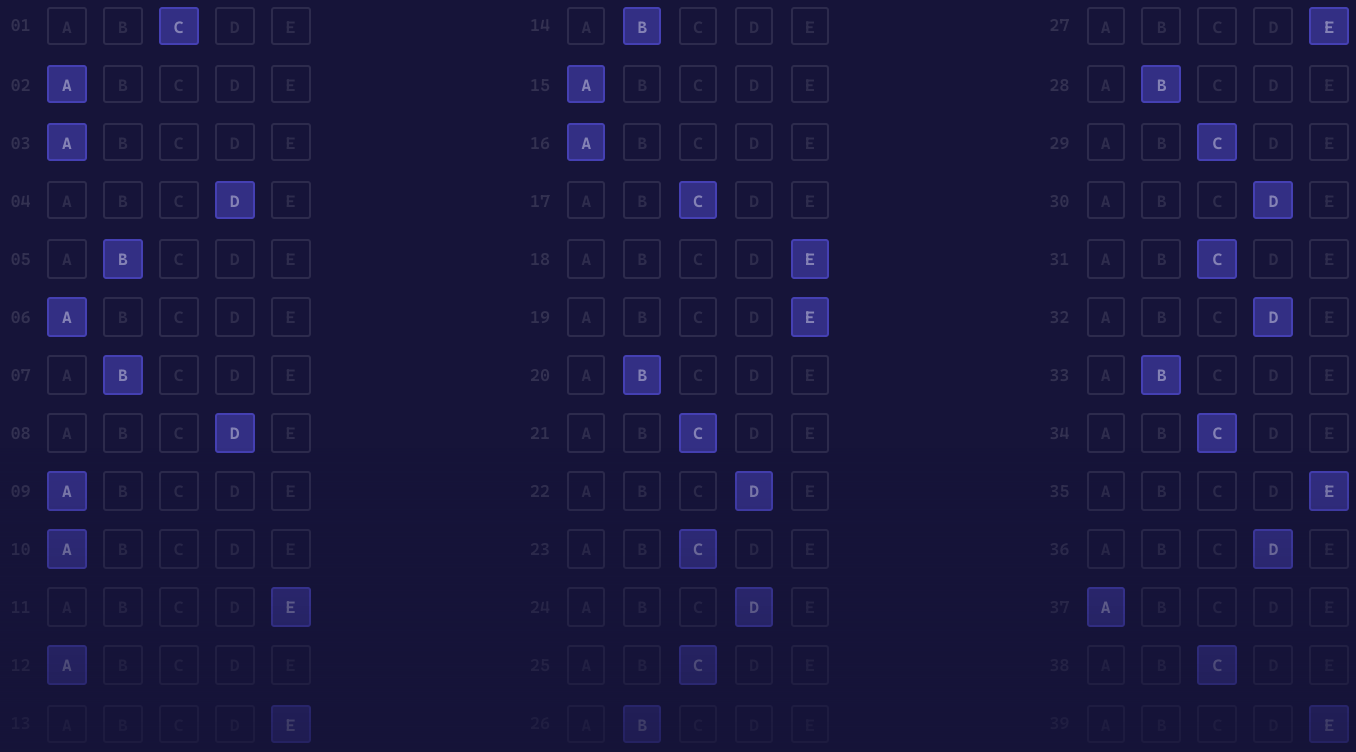

PRACTICE QUESTIONS

CONNECTICUT OCCUPATIONAL TRADES

X65XZ59U

CT BM1 Boiler Maker

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

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Before you begin

What this is

9 practice questions for CONNECTICUT OCCUPATIONAL TRADES `X65XZ59U`, 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, `X65XZ59U`
- 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 MULTIPLE CHOICE

Which of the following tools are commonly used by boilermakers for cutting, grinding, and weld preparation on plate and structural steel? (Choose three.)

A **Oxy-fuel cutting torch**

B **Hand-held angle grinder with cutting and grinding discs**

C **Beveling machine**

D Stud welder

E Wet/dry shop vacuum

ANSWER **A** · **B** · **C**

WHY The oxy-fuel torch, angle grinder, and beveling machine are standard boilermaker tools used for cutting plate and preparing weld bevels. A stud welder is used to fasten studs, not for general cutting or beveling, and a shop vacuum is a cleanup tool, not a fabrication tool.

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QUESTION 2 MULTIPLE CHOICE

A boilermaker crew is preparing to lift a 4-ton boiler section with an overhead crane. Which items must be verified before the lift begins? (Choose two.)

A **The sling has a rated capacity sufficient for the load and is free of visible damage**

B **The load chart for the crane has been consulted and the boom angle/radius is within capacity**

C The welder's helper has lit the preheat torch and is ready to begin welding

D The crane operator has a current Massachusetts hoisting license endorsement for the lifting operation in Connecticut

E The boiler section has been sandblasted and primed before lifting

ANSWER **A · B**

WHY Before any heavy lift, the rigging must be inspected and rated for the load (A), and the operator must confirm the load is within the crane's chart for the planned radius and configuration (B). Welding prep and priming are not prerequisites to a lift, and a Connecticut elevator/hoisting license would apply to elevator-type equipment rather than to a standard mobile or overhead crane (which is governed by OSHA crane standards and operator certification).

QUESTION 3 TRUE FALSE

A fire watch is required whenever hot work such as welding or cutting is performed outside a designated shop area, and the fire watch must remain on site for at least 30 minutes after the hot work has stopped.

A **True**

B False

ANSWER **A**

WHY Hot work outside designated shops requires a posted hot work permit, an assigned fire watch with an extinguishing means, and the watch must remain in place long enough to detect any smoldering fire after the work ends. Standard practice (and most local fire codes) require fire watch coverage after hot work for a minimum of 30 minutes.

QUESTION 4 SINGLE CHOICE

On a weld symbol, a small flag drawn at the break of the reference line indicates that the weld is to be made:

A **In the field (on site) rather than in the shop**

B All the way around the joint

C As a stitch (intermittent) weld

D On the arrow side only

ANSWER A

WHY Per AWS A2.4 weld symbol conventions, a flag at the junction of the reference line and the leader line designates a field weld — work to be performed at the erection site rather than in the fabricating shop. Continuous weld all-around is a circle at the intersection of reference and arrow, intermittent welds are noted with dimensioned symbols, and arrow-side-only welds have no side-specific symbol above or below the reference line.

QUESTION 5 SINGLE CHOICE

The function of a safety valve on a boiler is to:

A Maintain a constant water level in the drum

B Prevent the accumulation of dissolved gases in the boiler water

C **Relieve excess steam pressure before it exceeds the boiler's maximum allowable working pressure**

D Mix fuel and air for efficient combustion

ANSWER C

WHY A safety valve is a pressure-relief device required by the ASME Boiler and Pressure Vessel Code. It opens when boiler pressure reaches a set point to prevent rupture. Water level is controlled by feedwater regulators (A); deaerators and vents handle gases (B); burners mix fuel and air (D).

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QUESTION 6 SINGLE CHOICE

A boilermaker is laying out a 90-degree elbow from plate and needs to mark the miter cut lines on the pipe. The most accurate method to develop the cut pattern is to:

A Estimate the angle by eye and strike lines with a soapstone

B Use sheet-metal pattern development (parallel line or triangulation) to lay out the miter lines full size

C Cut a piece of cardboard to the same diameter, fold it, and use it as a one-off guide

D Refer to a manufacturer-published template without measuring the actual pipe

ANSWER B

WHY Accurate miter/branch fitting layouts are developed full scale from the actual pipe dimensions using either the parallel-line method or the triangulation method of pattern development. Eyeballing produces poor fit-up, cardboard is too imprecise for production work, and a generic manufacturer's template cannot account for the actual pipe's measured diameter and wall.

QUESTION 7 SINGLE CHOICE

When overhead burning, cutting, or welding is being performed above or near workers, the minimum PPE for those workers in the fall zone is:

A A standard hard hat, safety glasses, and leather gloves only

B A welding hood with appropriate filter shade, fire-resistant clothing, and a hard hat

C A hard hat, leather gauntlet gloves, and a face shield only when sparks are visible

D Ear plugs, safety glasses, and a cloth cap

ANSWER B

WHY Overhead hot work exposes workers to falling slag, sparks, and UV. Proper PPE includes head protection (hard hat) plus eye/face protection rated for the hot-work task (a welding hood or equivalent with the correct filter shade) and flame-resistant (FR) clothing. Plain glasses, a face shield, or ear plugs alone are insufficient protection from overhead sparks and arc radiation.

QUESTION 8 SINGLE CHOICE

Before a boilermaker enters the inside of a decommissioned boiler drum for inspection, the primary hazard control required is to:

A **Open all manways and doors and verify the space has been isolated, de-energized, and tested safe (atmospheric and confined space controls per OSHA 29 CFR 1910.146)**

B Send someone in first to check for bad air, and if they survive, the rest follow

C Light the burners so the heat drives out any remaining gases

D Connect a single extension cord and a trouble light and enter immediately

ANSWER **A**

WHY A boiler drum is a permit-required confined space. Entry requires isolation of all energy sources (steam, fuel, electrical), ventilation, atmospheric testing for oxygen and toxics, and a written permit with a trained attendant and rescue plan per OSHA 1910.146. Sending an unprotected person in first is reckless; firing burners in a drum is impossible and dangerous; and using a single corded light in an unverified atmosphere does not satisfy entry requirements.

QUESTION 9 SINGLE CHOICE

During visual inspection of a completed butt weld, the inspector notes a series of small cracks at the weld toe on the cap surface. The most likely cause is:

A **Excessive weld reinforcement with too high a heat input and/or high hydrogen levels**

B Insufficient root opening

C Use of a stainless-steel filler on carbon steel

D Slag inclusion in the root pass

ANSWER **A**

WHY Toe cracks at the cap surface are typically hydrogen-induced or solidification cracks tied to high heat input, heavy reinforcement, and/or restraint with high diffusible hydrogen. Root opening is unrelated to toe cracking; filler mismatch or slag inclusions produce different defects (cracking of dissimilar weld, or slag stringers in the weld).