

01	☐ A	☐ B	☐ C	☐ D	☒ E
02	☐ A	☒ B	☐ C	☐ D	☐ E
03	☒ A	☐ B	☐ C	☐ D	☐ E
04	☐ A	☐ B	☐ C	☒ D	☐ E
05	☐ A	☒ B	☐ C	☐ D	☐ E
06	☐ A	☐ B	☐ C	☒ D	☐ E
07	☐ A	☐ B	☐ C	☒ D	☐ E
08	☐ A	☐ B	☐ C	☐ D	☒ E
09	☐ A	☐ B	☐ C	☒ D	☐ E
10	☒ A	☐ B	☐ C	☐ D	☐ E
11	☐ A	☐ B	☐ C	☐ D	☒ E
12	☒ A	☐ B	☐ C	☐ D	☐ E
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14	☐ A	☐ B	☒ C	☐ D	☐ E
15	☐ A	☒ B	☐ C	☐ D	☐ E
16	☐ A	☐ B	☒ C	☐ D	☐ E
17	☒ A	☐ B	☐ C	☐ D	☐ E
18	☐ A	☒ B	☐ C	☐ D	☐ E
19	☐ A	☐ B	☐ C	☐ D	☒ E
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22	☐ A	☐ B	☐ C	☐ D	☒ E
23	☐ A	☐ B	☒ C	☐ D	☐ E
24	☐ A	☐ B	☐ C	☐ D	☒ E
25	☐ A	☐ B	☐ C	☐ D	☒ E
26	☐ A	☒ B	☐ C	☐ D	☐ E

27	☐ A	☒ B	☐ C	☐ D	☐ E
28	☐ A	☒ B	☐ C	☐ D	☐ E
29	☐ A	☒ B	☐ C	☐ D	☐ E
30	☐ A	☐ B	☐ C	☐ D	☒ E
31	☐ A	☐ B	☒ C	☐ D	☐ E
32	☐ A	☐ B	☒ C	☐ D	☐ E
33	☐ A	☒ B	☐ C	☐ D	☐ E
34	☐ A	☐ B	☒ C	☐ D	☐ E
35	☐ A	☐ B	☐ C	☒ D	☐ E
36	☐ A	☐ B	☐ C	☒ D	☐ E
37	☒ A	☐ B	☐ C	☐ D	☐ E
38	☐ A	☐ B	☒ C	☐ D	☐ E
39	☐ A	☒ B	☐ C	☐ D	☐ E

PRACTICE QUESTIONS

CONNECTICUT OCCUPATIONAL TRADES

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QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for CONNECTICUT OCCUPATIONAL TRADES RZH7TXMT , 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.

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- the question number
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QUESTION 1

MULTIPLE CHOICE

A journeyman working under an F4 limited journey license is installing a new outdoor service panel at a single-family dwelling. The panel is mounted 7 feet above grade. Which of the following safety considerations are required for this task? (Choose two.)

- ☒ **A** Inspect the ladder before use to ensure it is in good condition and rated for the load
- ☒ **B** Tie off or otherwise secure the ladder at the top to prevent it from slipping sideways
- ☐ **C** Wear a Class D hard hat at all times to protect against arc flash when working near live service conductors
- ☐ **D** Place the ladder base one foot away from the wall for every four feet of ladder working length (1:4 ratio)

ANSWER **A • B**

WHY Both A and B are required safe work practices for ladder use: pre-use inspection and securing the top to prevent sideways slip. C is wrong because the situation described is not a live work requiring Class D PPE for arc flash, and Class D hard hats are not the correct PPE category for arc flash protection (that is a different class). D is incorrect because the correct ladder placement ratio is 1 foot out for every 4 feet of working height (1:4), so a panel at 7 feet working height would require the base only about 1.75 feet from the wall, but more importantly, the typical ladder safety rule cited in OSHA 1926 is stated the opposite way for the leaning angle. The two clearly required items are inspection and top tying-off.

QUESTION 2

MULTIPLE CHOICE

An F4 limited journeyman is wiring a 30-ampere, 240-volt single-phase water heater circuit using THHN/THWN-2 copper conductors run in EMT. The breaker is rated 30 amperes and the terminals are listed for 75°C. The conductors will operate in an ambient temperature of 86°F (30°C). Which two of the following statements are correct regarding this installation? (Choose two.)

- ☐ **A** The minimum copper conductor size required for a 30-ampere breaker with 75°C-terminations is 10 AWG
- ☒ **B** The minimum copper conductor size required for a 30-ampere breaker with 75°C-terminations is 8 AWG
- ☒ **C** THHN/THWN-2 conductors have a 90°C insulation rating, so the 90°C column of NEC Table 310.16 may be used for derating, then limited by the 75°C terminal rating
- ☐ **D** Because the conductors are THHN rated 90°C, the terminal temperature rating does not need to be considered at any time

ANSWER B • C

WHY For a 30-ampere overcurrent device with conductors terminated on 75°C-rated terminals, NEC Table 310.16 requires a minimum of 8 AWG copper (10 AWG is only rated 30 A in the 60°C column). THHN/THWN-2 has 90°C insulation, so derating calculations and ambient temperature corrections may use the 90°C column, but the final ampacity after adjustment must not exceed the 75°C column value to protect the terminals. Therefore B and C are correct. D is wrong because terminal temperature limits always apply when conductors terminate on equipment.

QUESTION 3

TRUE/FALSE

True or False: A holder of a Connecticut F4 limited journeyman license is authorized to install, maintain, and repair electrical wiring and equipment on single-family residences only, and is not authorized to perform any work on commercial or industrial occupancies.

☒ **A** True☐ B False**ANSWER A**

WHY The Connecticut F4 limited journeyman license is restricted to limited electrical work on specific occupancy types as defined by the Connecticut Department of Consumer Protection, Occupational and Professional Licensing. The F4 classification is limited in scope and does not authorize unrestricted commercial or industrial work. Because the question correctly identifies this limitation, the statement is True.

QUESTION 4

SINGLE CHOICE

An F4 limited journeyman installs a device box that contains one 12-2 NM cable entering the box, a single-pole switch, and a receptacle. How many cubic inches of box fill are required for the switch and receptacle combined, based on NEC Table 314.16(B)?

- ☐ A Two conductor allowances only, because the devices are yoke-mounted and not counted separately
- ☐ B Four conductor allowances of the largest conductor (two for each device)
- ☒ **C Two conductor allowances of the largest conductor (one for each device)**
- ☐ D One volume allowance equal to the largest device's cubic-inch rating marked on the device

ANSWER C

WHY Per NEC 314.16(B), each device (switch or receptacle) supported by a mounting yoke is counted as two conductor allowances based on the largest conductor terminated on the device. With one device on each side of the yoke being counted separately, each device counts as one double-volume allowance (two conductor sizes). For a single switch and a single receptacle with 12 AWG conductors, two allowances of the largest 12 AWG conductor apply. Therefore, the correct answer is C.

QUESTION 5 SINGLE CHOICE

An F4 limited journeyman is rough-wiring a new single-family dwelling. Which of the following 120-volt branch circuits must be GFCI-protected under the current NEC?

- ☐ A Bedroom general-purpose receptacle circuit
- ☐ B Living room general-purpose receptacle circuit
- ☒ C Bathroom receptacle circuit
- ☐ D Hallway lighting circuit

ANSWER C

WHY The NEC requires GFCI protection for 125V through 250V receptacles in bathrooms of dwelling units. Bedroom, living room, and hallway lighting circuits are not required to have GFCI protection (although AFCI protection applies to many of these per NEC 210.12). Therefore, the bathroom receptacle circuit is the correct answer.

QUESTION 6 SINGLE CHOICE

When installing a 200-ampere residential service, an F4 limited journeyman must bond certain components to ensure a safe grounded system. Which of the following items is required to be bonded to the grounding electrode conductor or to the equipment grounding conductor at the service equipment?

- ☐ A The interior gas piping system
- ☒ B The interior hot and cold water piping system
- ☐ C The CSST gas piping only if it is provided with its own bonding means
- ☐ D The meter base enclosure only if it contains a neutral conductor splice

ANSWER B

WHY Per NEC 250.104(A), the interior metal water piping system in a building or structure supplied by a grounded service, or that has a metal water pipe in contact with earth, must be bonded to the service equipment grounding conductor. This is a fundamental bonding requirement. Interior gas piping is generally required to be bonded only if it is likely to become energized (NEC 250.104(B)), but the question's most universally required answer is the water piping system. Therefore, B is correct.

QUESTION 7

SINGLE CHOICE

An F4 limited journeyman is installing a 100-ampere residential loadcenter in a utility closet. The working space depth in front of the panel must comply with NEC 110.26. What is the minimum working space depth required when the panel is mounted with 240 volts to ground on one side and a concrete wall on the opposite side?

- ☒ **A** 3 feet
- ☐ **B** 2-1/2 feet
- ☐ **C** 3 feet only if the concrete wall has at least 6 inches of horizontal clearance
- ☐ **D** 6 feet

ANSWER A

WHY Per NEC Table 110.26(A), for 600V or less equipment with one side requiring access and the opposite side exposed to grounded parts (such as a concrete or plaster wall), the minimum working depth is 3 feet. Concrete walls are treated as grounded building surfaces for the purposes of this table, so the condition for 2-1/2 feet is not met. The correct minimum working depth is 3 feet, answer A.

QUESTION 8

SINGLE CHOICE

An F4 limited journeyman is verifying correct wiring on a 120/240-volt, three-wire dryer receptacle. Which of the following describes the correct identification of the neutral conductor at the dryer receptacle?

- ☐ A The neutral must be the conductor with red insulation
- ☒ B The neutral must be identified by being marked with white or natural gray at every termination point
- ☐ C The neutral is the conductor connected to the larger blade on the receptacle, and color is not required
- ☐ D The neutral does not require identification on a 120/240-volt three-wire circuit

ANSWER B

WHY Per NEC 200.6 and 210.5, the grounded (neutral) conductor must be identified by a continuous white or natural gray color, or by three continuous white stripes on any other color. Reidentification of conductors with colored tape is permitted only for specific conductor sizes and applications. The neutral must always be properly identified at every termination. Therefore, B is correct.

QUESTION 9

SINGLE CHOICE

An F4 limited journeyman is installing a continuous load on a branch circuit. The noncontinuous load is 10 amperes and the continuous load is 14 amperes on a single 120-volt branch circuit. What is the minimum standard-size overcurrent device permitted for this circuit?

- ☐ A 15 amperes
- ☐ B 20 amperes
- ☐ C 25 amperes
- ☒ D 30 amperes

ANSWER D

WHY Per NEC 210.20(A) and 215.3, the overcurrent device rating must be not less than the noncontinuous load plus 125 percent of the continuous load. Here, $10\text{ A} + (14\text{ A} \times 1.25) = 10 + 17.5 = 27.5\text{ A}$. The next standard size per NEC 240.6(A) is 30 amperes. Therefore, the correct answer is D.