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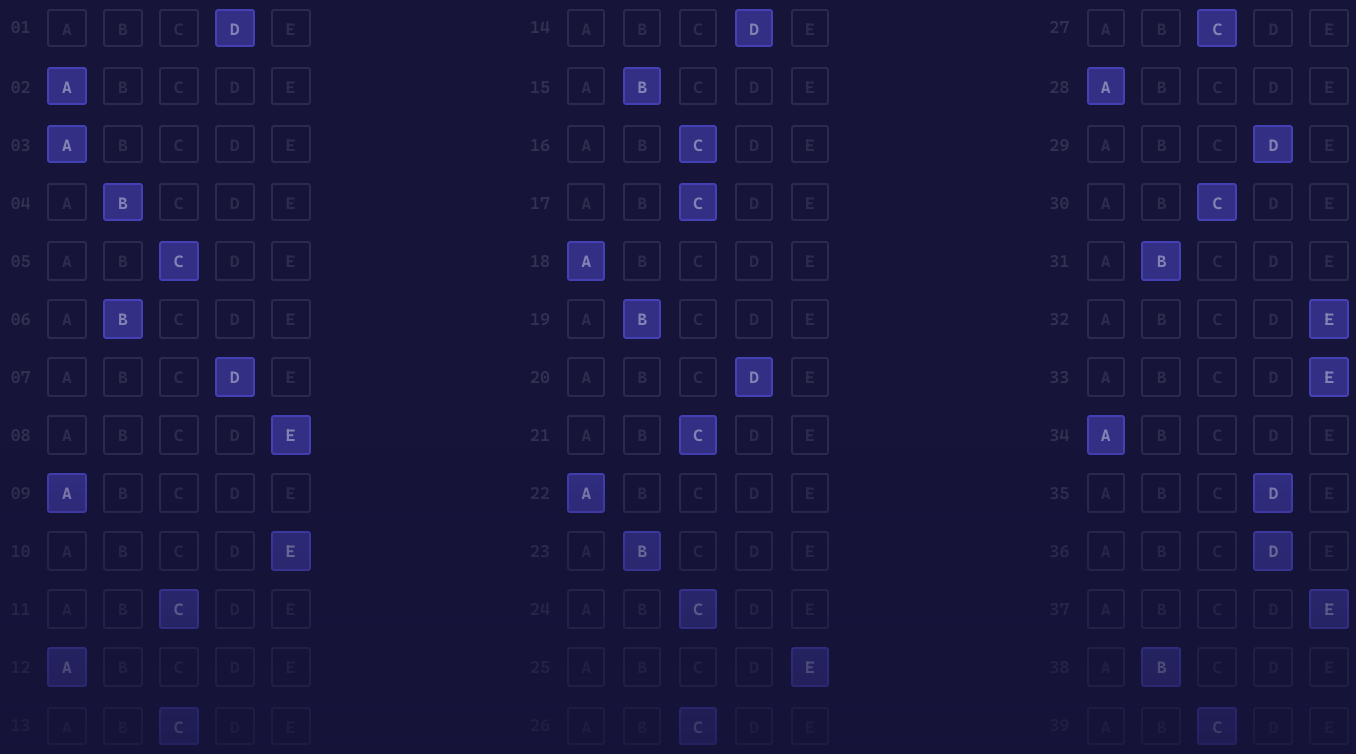

PRACTICE QUESTIONS

Colorado Electricians

CAC2QNVY

CO Journeyman Wireman (6 plus Year Apprentices Exam)

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

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Before you begin

What this is

9 practice questions for Colorado Electricians `CAC2QNVY`, 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, `CAC2QNVY`
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QUESTION 1 SINGLE CHOICE

According to the current National Electrical Code adopted in Colorado, which of the following locations requires GFCI protection for 125-volt through 250-volt receptacles installed in dwelling units?

A **Within 6 feet of a kitchen sink**

B Inside a bedroom closet

C In a finished basement recreation room

D On a dedicated circuit supplying a window air conditioner

ANSWER **A**

WHY Per NEC 210.8(A), GFCI protection is required for 125V through 250V receptacles located in areas such as bathrooms, garages, outdoors, crawl spaces, basements, kitchens, sinks, laundry areas, and within 6 feet of a sink. A bedroom closet does not require GFCI under 210.8(A), a finished basement rec room requires GFCI under 210.8(A)(5) but is not listed in the most-distinct commonly-tested specific distance rule, and a window A/C on a dedicated circuit is exempt under 210.8(A) exception #4. Option A is the clearest, code-cited correct answer.

QUESTION 2 SINGLE CHOICE

When calculating the branch-circuit load for a dwelling unit range rated 12 kW or less, what demand factor does NEC Table 220.55 permit?

A 100 percent of the nameplate rating

B 80 percent of the nameplate rating

C **Per Column C of Table 220.55 based on kW rating and number of appliances**

D 75 percent of the nameplate rating

ANSWER **C**

WHY NEC Table 220.55 provides demand factors for household electric ranges, wall-mounted ovens, counter-mounted cooking units, and similar appliances. For a single range, Column C of Table 220.55 is used based on the kW rating. Options A, B, and D are incorrect because the standard demand factors for these appliances are taken directly from Table 220.55, not a flat percentage.

QUESTION 3 SINGLE CHOICE

Which of the following is required to be bonded to the equipment grounding conductor when installed in a nonmetallic-sheathed cable (Type NM) branch circuit?

A The neutral conductor at every device box

B The metal device box and the equipment grounding conductor of the NM cable

C Only the receptacle grounding terminal

D The grounded conductor at the load end of the circuit

ANSWER B

WHY Per NEC 250.146, the equipment grounding conductor of a nonmetallic-sheathed cable must be connected to any metal device box and to the grounding terminal of the receptacle. Bonding the neutral to the box or grounding conductor downstream (A and D) is prohibited and creates objectionable current. Option C is incomplete because the metal box itself must also be bonded.

QUESTION 4 SINGLE CHOICE

When more than three current-carrying conductors are installed in a raceway, what is the minimum conductor ampacity adjustment required by NEC Table 310.15(C)(1)?

A 80 percent for 4 through 6 conductors

B 70 percent for 7 through 9 conductors

C 50 percent for 10 through 20 conductors

D All of the above adjustments apply based on conductor count

ANSWER D

WHY NEC Table 310.15(C)(1) provides adjustment factors: 80% for 4–6 conductors, 70% for 7–9, 50% for 10–20, and 45% for 21–30, with further reductions beyond 30. All listed adjustment values are correct per the table, making D the best answer. Note that 'All of the above' is allowed here because the listed percentages are individually true code-mandated values, not because they sum together.

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QUESTION 5 SINGLE CHOICE

What is the maximum standard rating of an inverse-time (regular-duty) circuit breaker permitted for use as overcurrent protection of a 50-ampere rated conductor supplying a non-motor load?

A 50 amperes

B 60 amperes

C 70 amperes

D 100 amperes

ANSWER B

WHY Per NEC 240.6(A) and 240.4(B), the next standard size up overcurrent protection device is permitted for conductors when the ampacity of the conductors does not correspond to a standard ampere rating. The next standard size above 50A is 60A. Standard sizes per 240.6(A) are 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100.

QUESTION 6 SINGLE CHOICE

Under NEC 314.16, each conductor that originates outside a box and terminates inside the box counts as how many conductor volumes when computing box fill?

A One

B Two

C Zero

D One-half

ANSWER A

WHY Per NEC 314.16(B)(1), each conductor that originates outside the box and terminates inside the box is counted as one conductor. Conductors passing through without splice count as one, and internal cable clamps, support fittings, and equipment grounding conductors are counted separately per the section's subsections.

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QUESTION 7 SINGLE CHOICE

For a single-phase motor, the conductor supplying the motor must have an ampacity of not less than what percentage of the motor's nameplate full-load current?

A 80 percent

B 100 percent

C 125 percent

D 150 percent

ANSWER C

WHY NEC 430.22 requires branch-circuit conductors supplying a single-phase motor to have an ampacity not less than 125 percent of the motor's nameplate full-load current. This ensures the conductors can handle the inrush and continuous operating current without overload.

QUESTION 8 MULTIPLE CHOICE

Which of the following receptacles installed in a dwelling unit are required to be listed as tamper-resistant (TR) per the NEC? (Choose two.)

A 125V, 15A and 20A receptacles in dwelling unit bedrooms

B 125V, 15A and 20A receptacles in dwelling unit kitchens above the counter

C A receptacle located more than 5½ feet above the floor in an unfinished basement

D A receptacle dedicated to a fixed appliance such as a dishwasher

ANSWER A · B

WHY NEC 406.12 requires 125V, 15A and 20A receptacles in dwelling units to be listed as tamper-resistant, including those in bedrooms and kitchen counters. Exceptions include receptacles more than 5½ feet above the floor, dedicated appliance receptacles not readily accessible, and receptacles in unfinished basements meeting specific criteria. Therefore A and B are required TR, while C and D fall under listed exceptions.

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QUESTION 9 MULTIPLE CHOICE

Which of the following wiring methods are permitted for emergency circuits per NEC Article 700? (Choose two.)

A Installed in the same raceway with general lighting circuits provided they are separated by a barrier

B Kept entirely independent of all other wiring except in transfer equipment and exit luminaires

C Installed using Type NM cable in a residential application

D Run in a metal raceway dedicated to the emergency system where located within 2 inches of normal wiring

ANSWER **B · D**

WHY Per NEC 700.10, emergency wiring must be kept entirely independent of all other wiring and may only enter raceways, boxes, or cabinets where necessary to connect to emergency equipment. Separation from normal wiring is required, and combining with general circuits (A) is not permitted. Type NM is not permitted for emergency feeders (C). A dedicated metal raceway maintaining 2-inch separation is one acceptable method (D), and the independence requirement (B) is the foundational rule.

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