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39	A	B	C	D	E

PRACTICE QUESTIONS

ARIZONA REGISTRAR OF CONTRACTORS

SBFGKLS5

AZ C-58 (CR-58) Warm Air Heating, Evaporative Cooling and Ventilating (Residential/Commercial)

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for ARIZONA REGISTRAR OF CONTRACTORS **SBFGKLS5**, 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, **SBFGKLS5**
- the question number
- the email address on your order

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

QUESTION 1

SINGLE CHOICE

An installer is running a new warm air supply duct through an unconditioned attic in climate zone 2. According to the IMC/IRC, what is the minimum required insulation R-value for this supply duct?

- ☐ A R-4.2
- ☐ B R-6.0
- ☒ C R-8.0
- ☐ D R-12.0

ANSWER C

WHY The IMC requires supply ducts in unconditioned spaces to be insulated to a minimum of R-8.0. R-6.0 is the minimum for return ducts in the same locations, R-4.2 applies to ducts located within the building envelope, and R-12 is not a standard prescriptive minimum.

QUESTION 2

SINGLE CHOICE

A natural-draft gas furnace is being installed on a residential job. The minimum clearance from the front of the furnace (the burner access side) to a combustible wall must be at least how many inches?

- ☐ A 6 inches
- ☐ B 12 inches
- ☒ C 18 inches
- ☐ D 24 inches

ANSWER C

WHY Manufacturer installation instructions and the IMC typically require a minimum working/access clearance of 18 inches at the front of a gas furnace so the burner compartment can be serviced and for combustion air. 6 and 12 inches are too small for a service access area, and 24 inches is more than the minimum required.

QUESTION 3

SINGLE CHOICE

An Arizona C-58 (CR-58) licensed contractor is bidding a job that includes installing a 5-ton package gas/electric rooftop unit on a small commercial building. Which statement correctly describes the contractor's scope of work?

- ☐ **A** The CR-58 license only covers residential work, so the contractor must turn the job over to a C-39 (air conditioning and refrigeration) contractor.
- ☒ **B** The CR-58 license covers warm air heating, evaporative cooling and ventilating work in both residential and commercial settings within the limits of the classification.
- ☐ **C** The contractor must also hold a separate C-39 license any time refrigerant lines are connected to the rooftop unit.
- ☐ **D** A CR-58 license only allows evaporative cooling work on commercial buildings, not gas heating.

ANSWER B

WHY The CR-58 (formerly C-58) classification covers warm air heating, evaporative cooling and ventilating for both residential and commercial work within the scope of the classification. Statement A is wrong because the classification is not residential-only. Statement C is generally not true for warm air heating/evaporative cooling work that falls within the CR-58 scope, and statement D misstates the scope of the license.

QUESTION 4

SINGLE CHOICE

For an upflow gas furnace installed in a residential closet, which combustion air opening requirement applies when air is taken from inside the building?

- ☐ **A** One opening, 1 square inch per 4,000 BTU of total input, minimum 100 square inches.
- ☒ **B** Two openings, each sized at 1 square inch per 2,000 BTU of total input, one within 12 inches of the top and one within 12 inches of the bottom of the closet.
- ☐ **C** Two openings, each sized at 1 square inch per 5,000 BTU of total input, both within 12 inches of the floor.
- ☐ **D** Combustion air from inside the building is not permitted for gas furnaces located in enclosed spaces.

ANSWER B

WHY Per the IRC/IFGC and manufacturers' instructions, when combustion air is taken from the inside of the building for a gas furnace in an enclosed space such as a closet, two openings are required — one high (within 12 inches of the top) and one low (within 12 inches of the bottom) — each sized at a minimum of 1 square inch per 2,000 BTU of total input, and not smaller than 100 square inches each. Option A describes a single opening, option C uses an incorrect ratio and placement, and option D is incorrect because inside air is allowed.

QUESTION 5

SINGLE CHOICE

A service technician is entering an attic to replace a gas furnace blower motor. Which is the most appropriate fall-protection / safe-access step before stepping onto the attic framing?

- ☐ A Walk on the bottom chords of the trusses because they are the strongest part.
- ☒ B Place a solid walkway of planks or plywood across the ceiling joists/trusses and only step on the walkway or framing members designed to bear the load.
- ☐ C Crawl along the tops of the ceiling joists while carrying tools, since one hand must stay free at all times.
- ☐ D Tie off to a single ceiling joist with a rope harness before stepping off the access ladder.

ANSWER B

WHY Standard OSHA fall-protection and attic safe-access guidance requires a stable walking surface (planks or plywood laid across joists or trusses) and stepping only on framing members or the walkway. Walking on the bottom chord, crawling along joists while carrying tools, and tying off to a single ceiling joist are not accepted safe practices for attic work.

QUESTION 6

SINGLE CHOICE

A roof-mounted evaporative cooler (swamp cooler) is being installed on a residential dwelling. What is the minimum required clearance between the discharge opening of the cooler and any building opening (such as a window or door)?

- ☐ A At least 2 feet
- ☐ B At least 3 feet
- ☒ C At least 5 feet
- ☐ D At least 10 feet

ANSWER C

WHY The IMC and most manufacturer instructions require that the discharge of an evaporative cooler be at least 5 feet from any building opening, property line, or adjacent structure so that discharged air does not re-enter the building or cause problems at a property line. 2 feet and 3 feet are too small, and 10 feet is not the minimum.

QUESTION 7

SINGLE CHOICE

On a residential plan, the supply duct run feeding a bedroom register is shown with a marked CFM of 110. The duct is round, 8 inches in diameter. Using a standard duct friction chart, which air velocity at the register is closest to the typical design range for this size duct?

- ☐ A About 200 fpm
- ☐ B About 500 fpm
- ☒ C About 850 fpm
- ☐ D About 1,400 fpm

ANSWER C

WHY An 8-inch round duct has a cross-sectional area of about 0.349 sq ft. $110 \text{ CFM} \div 0.349 \text{ sq ft} \approx 315 \text{ fpm}$. Among the listed options, ~500 fpm is the closest to typical residential supply-duct design velocities (often designed in the 600–900 fpm range for trunk and higher-velocity branches, with branch takeoffs typically targeted to keep noise and pressure drop reasonable). The 200 fpm and 1,400 fpm answers are clearly outside standard residential supply design.

QUESTION 8

SINGLE CHOICE

A gas furnace is being installed in a residential garage. Which installation requirement applies specifically because of the garage location?

- ☐ A The furnace must be listed for outdoor installation only.
- ☒ B The furnace burners and ignition source must be located a minimum of 18 inches above the floor unless listed otherwise.
- ☐ C The furnace must be ducted only to the garage, never to the living space.
- ☐ D The furnace must be enclosed in a fire-rated room of 2-hour construction.

ANSWER B

WHY The IRC/IFGC require that sources of ignition (including gas furnace burners and pilot lights) be located at least 18 inches above the garage floor unless the appliance is listed for lower mounting. They do not require outdoor-only listing, they can still serve the living space when properly designed, and a 2-hour fire-rated room is not required by the IRC.

QUESTION 9

MULTIPLE CHOICE

When sizing a residential forced-air heating system using Manual J / Manual S principles, which two factors must be considered when selecting the furnace output? (Choose two.)

- ☒ **A** The heating load of the structure (BTU/hr), including envelope, infiltration and duct losses.
- ☐ **B** The color of the furnace cabinet as specified by the architect.
- ☒ **C** The design outdoor temperature for the project's climate zone.
- ☐ **D** The square footage of the homeowner's lawn.
- ☐ **E** The rated AFUE of the furnace.

ANSWER A - C

WHY Selecting a furnace requires knowing the calculated heating load (Manual J) and the design outdoor temperature for the climate, both of which drive the required net BTU/hr output. The cabinet color and lawn size are irrelevant to sizing, and AFUE is an efficiency rating that affects fuel use, not the required output capacity to match the load.