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38	A	B	C	D	E
39	A	B	C	D	E

PRACTICE QUESTIONS

ARIZONA REGISTRAR OF CONTRACTORS

BM Y5N9S2

AZ B-4 General Residential Engineering

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for ARIZONA REGISTRAR OF CONTRACTORS BMY5N9S2 , 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, BMY5N9S2
- 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 applicant is applying for the Arizona B-4 General Residential Engineering license. Which of the following is a required experience qualification the Registrar will verify?

- ☒ **A** At least 4 years of experience in residential engineering within the past 10 years
- ☐ **B** At least 2 years of experience in any construction trade
- ☐ **C** A current Arizona PE (Professional Engineer) license in civil engineering
- ☐ **D** Completion of a 4-year NAU engineering degree

ANSWER A

WHY The Registrar of Contractors requires applicants for the B-4 classification to demonstrate a minimum of four years of qualifying experience in residential engineering work within the ten years preceding the application. A PE license or a college degree, while potentially helpful, is not by itself the qualifying experience criterion, and two years in an unrelated trade does not satisfy the B-4 requirement.

QUESTION 2

SINGLE CHOICE

Under the Arizona Registrar of Contractors rules, the B-4 General Residential Engineering license allows the licensee to perform engineering on which type of structures?

- ☐ **A** Any commercial building up to 5 stories
- ☒ **B** Residential structures that do not exceed three stories in height
- ☐ **C** Industrial facilities of any size
- ☐ **D** Public highways and bridges

ANSWER B

WHY The B-4 classification is limited to engineering work on residential structures that do not exceed three stories in height, as defined in the Arizona Revised Statutes and Rules of the Registrar. Commercial, industrial, and public-works structures fall outside the B-4 scope and require other classifications.

QUESTION 3

SINGLE CHOICE

A residential engineering contractor is designing a foundation on expansive (clay) soil in the Phoenix metropolitan area. Which foundation type is most commonly accepted by building officials for this condition?

- ☐ A A monolithic slab-on-grade with no footings
- ☒ B A post-tensioned slab designed to resist soil movement
- ☐ C A timber pile foundation only
- ☐ D A plain concrete slab without reinforcement

ANSWER B

WHY In the Phoenix area, expansive clay soils are common, and post-tensioned slabs are the standard, accepted design for residential foundations because the tendons hold the slab together as the soil swells and shrinks. A monolithic slab without footings, unreinforced slabs, and timber piles are not appropriate residential solutions for expansive soils in this region.

QUESTION 4

SINGLE CHOICE

A B-4 licensee is calculating roof loads for a single-family residence in northern Arizona at an elevation of 7,000 feet. Which load consideration is specifically required by code for this location?

- ☐ A Reduced live load due to high elevation
- ☒ B Increased snow load based on ground snow depth and exposure
- ☐ C Elimination of dead load calculations
- ☐ D Removal of wind load requirements

ANSWER B

WHY Higher elevations in Arizona require the designer to apply increased snow (and often roof) loads based on the ground snow load map and exposure conditions in the adopted building code. Live loads do not decrease with elevation, and dead load and wind load requirements remain in effect.

QUESTION 5

SINGLE CHOICE

A licensee is designing a residential retaining wall that will retain 4 feet of soil and support a driveway above it. Per typical code and engineering practice in Arizona, which design step is required?

- ☐ A Ignoring surcharge loads from the driveway
- ☐ B Designing only for the weight of the soil
- ☒ C Analyzing the wall for surcharge loads, sliding, overturning, and bearing capacity
- ☐ D Eliminating the need for a footing because the wall is short

ANSWER C

WHY Even a relatively short residential retaining wall carrying a driveway surcharge must be designed to resist surcharge loads, sliding, overturning, and bearing capacity failure. Ignoring the surcharge, omitting the footing, or considering only the weight of the soil would produce an unsafe and non-compliant design.

QUESTION 6

SINGLE CHOICE

For a single-family residence, code typically requires the finished grade around the foundation to fall away from the building at a minimum slope of how many inches per foot for the first several feet?

- ☐ A 1/8 inch per foot
- ☐ B 1/4 inch per foot
- ☒ C 1/2 inch per foot
- ☐ D 1 inch per foot

ANSWER C

WHY The adopted residential code requires the grade within the first several feet of the foundation to slope away from the building at a minimum of 1/2 inch per foot (about 6 inches in 10 feet) to drain surface water away from the foundation. Flatter slopes such as 1/8 or 1/4 inch per foot are not adequate to prevent ponding against the foundation.

QUESTION 7

SINGLE CHOICE

In Arizona, most jurisdictions adopt a building code that places residential structures in a specific seismic design category. For a typical single-family home in the Phoenix area, what is the general seismic design category?

- ☐ A Seismic Design Category A
- ☒ B Seismic Design Category B
- ☐ C Seismic Design Category D
- ☐ D Seismic Design Category F

ANSWER B

WHY Most of the Phoenix metropolitan area is in Seismic Design Category B, which reflects the relatively low seismic hazard in central Arizona compared to higher-hazard regions. SDC A is even lower but applies to very small areas, while SDC D and F are found in much more seismically active regions.

QUESTION 8

SINGLE CHOICE

A homeowner hires an unlicensed person to perform B-4 residential engineering work on their home. Under Arizona law, who is responsible for the violation?

- ☐ A Only the homeowner, not the worker
- ☒ B Both the unlicensed person performing the work and the person or entity who contracted for the work
- ☐ C Only the local building department
- ☐ D No one, because residential work is exempt

ANSWER B

WHY Arizona law makes it unlawful to act as a contractor without a license and also makes it unlawful for a property owner or other party to engage an unlicensed person to perform work for which a license is required. Both the unlicensed worker and the party contracting for the work may be cited.

QUESTION 9

MULTIPLE CHOICE

A B-4 licensee is preparing an engineered drawing package for a new custom residence to submit for permit. Which of the following items must be included? (Choose two.)

- ☒ **A** Engineered foundation plan with dimensions and reinforcement or post-tensioning details
- ☒ **B** Sealed calculations for the roof, floor, and wall structural systems
- ☐ **C** A marketing brochure for the contractor's other services
- ☐ **D** An interior paint color schedule

ANSWER A • B

WHY A complete residential engineering submittal must contain the engineered foundation plan showing sizes and reinforcement/post-tensioning details, and the supporting structural calculations sealed by the licensee. Marketing brochures and interior finish schedules are not required and have no place in the engineering submittal package.