PRACTICE EXAM 6 — SIMULATION (130 QUESTIONS)

Section 1: Trade and Technical (Questions 1–80)

1. A builder orders concrete for a footing 60 feet long, 2 feet wide, and 1 foot deep, then must decide how much to order. The volume needed is:

A. 4.44 cubic yards

B. 120 cubic yards

C. 12 cubic yards

D. 1.5 cubic yards

2. A slab 20 feet by 30 feet is poured 4 inches thick, and the builder adds a 5% waste allowance. The base volume before waste is approximately:

A. 600 cubic yards

B. 200 cubic yards

C. 7.4 cubic yards

D. 7.4 cubic yards plus waste

3. A roof rises 8 feet over a 32-foot run, and the builder must confirm the chosen shingle, rated for a 3:12 minimum, may be used. The slope is:

A. 3:12, so the shingle may be used

B. 6:12, below the shingle minimum

C. 2:12, below the shingle minimum

D. 4:12, exactly at the shingle minimum but not allowed

4. A 4,500-square-foot attic is to be vented at the baseline ratio, and the builder must split the venting equally between soffit and ridge. The total net free vent area required is:

A. 7.5 square feet

B. 15 square feet

C. 22.5 square feet

D. 30 square feet

5. A wall is 32 feet long with studs at 16 inches on center. After determining the stud count, the builder also needs a header over a single opening. The approximate number of common studs (one at each end, excluding the opening) is:

A. 16

B. 32

C. 25

D. 48

6. A footing must bear below a 42-inch frost line on competent soil. The builder excavates and finds organic topsoil at 42 inches, so the correct action is to:

A. Pour at 42 inches regardless of the soil

B. Add water to firm the topsoil

C. Excavate deeper to competent soil or use engineered fill

D. Use higher-strength concrete to compensate

7. A foundation wall retains 8 feet of backfill, and the builder must both size the wall and time the backfill correctly. The correct sequence is to:

A. Backfill first, then brace the wall

B. Backfill immediately after the pour

C. Size the wall for 4 feet of backfill to save material

D. Brace or support the wall before backfilling

8. A concrete supplier offers a mix, and the finisher wants to add water for workability. To keep strength while improving placement, the builder should:

A. Add water until the mix flows

B. Use a water-reducing admixture instead of water

C. Add dry cement on site

D. Pour the mix and hope it cures

9. A slab is poured in hot, dry, windy weather. To ensure it reaches design strength, the builder must:

A. Keep it moist during curing to allow hydration

B. Let it dry as fast as possible

C. Expose it to maximum direct sun

D. Pour it and walk away

10. A homeowner reports a wet basement after rain, and the builder confirms the grade slopes toward the house with no perimeter drain. The most complete corrective approach is to:

A. Paint the interior walls only

B. Add attic ventilation

C. Install a larger water heater

D. Regrade away from the foundation and add a perimeter drain

11. A sill plate of ordinary lumber is found bolted to a damp concrete foundation, and rot is beginning. The builder must replace it with:

A. Pressure-treated or naturally durable lumber with a capillary break

B. A higher-strength concrete cap

C. The same lumber sealed with paint

D. A thicker but untreated plate

12. A nominal 2×10 joist spans a beam pocket, and the builder must verify clearance. The actual depth to clear is:

A. 9¼ inches

B. 10 inches

C. 8 inches

D. 11¼ inches

13. A floor feels bouncy, and the builder finds joists spaced at 24 inches on center that should have been closer. To stiffen a similar floor without changing joist size, the builder would:

A. Use a lower-grade joist

B. Increase the spacing further

C. Decrease the spacing between joists

D. Reduce the bearing length

14. A plumber bores a 3-inch hole in the bottom edge of a joist at mid-span, and the builder must respond. The builder should:

A. Allow it since holes help drainage

B. Allow it since mid-span is unrestricted

C. Reject it, as the bottom edge at mid-span is the worst location

D. Allow it if the top edge is also bored

15. A wide opening is framed, and the builder must identify which member carries the load around it. That member, which transfers load to the jack studs, is the:

A. Header

B. Cripple stud

C. Rough sill

D. Sole plate

16. A high-wind home needs its sheathing nailed to resist racking, and the builder must specify the schedule. The element that develops the wall's shear capacity is the:

A. Nailing schedule at panel edges and field

B. Paint color

C. Insulation R-value

D. Window placement

17. A snow load reaches the roof, and the builder traces it to the ground. The continuous load path runs from the roof through the rafters and walls to the:

A. Plumbing system

B. Foundation and soil

C. Electrical panel

D. Gutter system

18. A coastal home needs uplift resistance, and the builder must connect the roof to the walls. The correct connector is the:

A. Hurricane tie

B. Anchor bolt

C. Sill-plate sealer

D. Shear-wall hold-down

19. A stick-framed roof shows walls bowing outward, and the builder must identify the missing element. The element that resists rafter thrust is the:

A. Roof covering

B. Ridge vent

C. Gutter system

D. Ceiling joists or rafter ties

20. A homeowner wants a truss web cut for storage, and the builder must respond. The correct action is to:

A. Cut it since one web remains

B. Refuse unless the truss engineer approves

C. Cut it to clear ductwork

D. Let the framer decide on site

21. A 1,500-square-foot attic must be vented, and after calculating the baseline area the builder also installs baffles. The baseline net free vent area required is:

A. 10 square feet

B. 5 square feet

C. 30 square feet

D. 15 square feet

22. A cold-climate roof leaks at the eaves after a freeze, and the builder identifies the missing component. To prevent ice-dam leaks, the builder must install:

A. A ridge vent

B. A drip edge only

C. An ice barrier membrane at the eaves

D. A gutter guard

23. A roof leak is reported, and the builder must decide where to inspect first based on probability. The most likely origin is a:

A. Field shingle

B. Ridge cap

C. Valley, penetration, or chimney flashing

D. Sheathing underside

24. A penetration was sealed with caulk and now leaks. The lasting repair, and the reason for it, is to install:

A. More caulk, since caulk lasts indefinitely

B. Field shingles, since the field is the weak point

C. A ridge vent, since vents stop leaks

D. Proper flashing, since flashing sheds water by design while caulk degrades

25. A downspout discharges at the foundation, saturating the soil and threatening the basement. The builder must:

A. Connect it to the attic drain

B. Extend it to discharge well away from the foundation

C. Leave it, since the wall is waterproofed

D. Reduce the gutter size

26. A crew installs housewrap with the top course tucked behind the lower course. The builder corrects it because each upper piece must:

A. Be caulked on all edges

B. Overlap the piece below for down-and-out drainage

C. Tuck behind the lower piece

D. Be installed randomly

27. A brick veneer wall is built tight to the sheathing with no weep holes, and the backing later rots. The omitted feature, and its purpose, is:

A. Extra ties, to carry more load

B. Interior paint, to block vapor

C. An air space and weep holes, to drain absorbed water

D. A second sheathing layer, to add strength

28. Vinyl siding buckles in summer heat, and the builder identifies the install error. The siding should have been:

A. Painted after installation

B. Installed without housewrap

C. Lapped behind the lower course

D. Fastened loosely to allow thermal movement

29. A homeowner compares two windows by U-factor and asks which insulates better. The builder explains the better choice is the one with the:

A. Higher U-factor

B. Lower U-factor

C. Higher SHGC

D. Larger glass area

30. A glass panel is set beside the front door with ordinary glass, and the inspector flags it. The builder must replace it with:

A. A smaller pane of the same glass

B. Frosted glass

C. Single-pane clear glass

D. Tempered or laminated safety glazing

31. A basement bedroom is finished with only a high transom window, and the inspector requires a change. The builder must add an emergency escape opening meeting limits for clear area, width, height, and:

A. Glass tint

B. Frame color

C. U-factor

D. Maximum sill height above the floor

32. An R-30 batt is compressed into a shallow bay, and the builder must explain the effect. The compression will:

A. Increase the R-value

B. Improve the fire rating

C. Reduce the effective R-value

D. Add structural strength

33. Heat escapes through the studs of an insulated wall, and the builder must interrupt the thermal bridge. The correct measure is:

A. More cavity batt insulation

B. Continuous exterior rigid foam

C. Extra drywall layers

D. Interior paint

34. In a heating climate, the builder must place the vapor retarder to prevent condensation on the cold sheathing. The correct placement is the:

A. Cold exterior side

B. Cladding face

C. Both sides of the assembly

D. Warm interior side of the insulation

35. A tight new home has poor air quality and high humidity, and the builder identifies the missing system. The home needs:

A. More attic insulation

B. Whole-house mechanical ventilation

C. A larger water heater

D. Additional cladding

36. A bath fan is found discharging into the attic, where moisture stains appear. The builder must reroute it to discharge:

A. At the attic ridge

B. Into the soffit cavity

C. Outdoors

D. Into the crawlspace

37. A crawlspace shows mold and decay, and the builder must control the moisture. The two valid approaches are venting to the exterior or:

A. Sealing and conditioning it with a ground cover

B. Filling it with gravel

C. Leaving the soil bare

D. Adding a second slab

38. Supply piping runs through an uninsulated cold attic, and the builder must address the chief risk. That risk is:

A. Excessive pressure

B. Freezing and bursting

C. Loss of a trap seal

D. Corrosion only

39. A rarely used floor drain emits sewer gas, and the builder diagnoses the cause. The most likely cause is:

A. Excessive supply pressure

B. A frozen supply line

C. An evaporated trap seal

D. An oversized vent

40. A new sink gurgles and loses its trap seal after each use, and the builder identifies the defect. The defect is a:

A. Trap installed right-side up

B. Pressure regulator failure

C. Missing or inadequate vent allowing siphoning

D. Oversized drain line

41. A breaker trips repeatedly, and a worker proposes a larger breaker on the same wire. The builder rejects this because it would:

A. Solve the problem safely

B. Allow the conductor to overheat and risk fire

C. Increase the wire's capacity

D. Reduce the connected load

42. A kitchen receptacle near the sink has no shock protection, and the builder must add the correct device. That device is a:

A. GFCI

B. Standard breaker only

C. Surge suppressor

D. Tamper-resistant cover alone

43. Bedroom circuits lack arc-fault protection, and the builder must add AFCI devices to guard against:

A. Shock near water

B. Voltage surges

C. Fires caused by arcing faults

D. Child tampering

44. A home has a gas furnace and attached garage but no CO detection, and the builder must place alarms. They must be located:

A. In the garage only

B. Near each separate sleeping area

C. In the attic only

D. At the meter outdoors

45. A gas appliance in a tight home backdrafts, and the builder must correct the hazard. The best approach is to:

A. Seal the home tighter

B. Remove the CO alarms

C. Block the appliance vent

D. Provide combustion air or use a sealed-combustion unit

46. A footing only 12 inches deep is found where the frost line is 42 inches, and the builder predicts the outcome. The expected failure is:

A. Slow curing

B. Frost heave cracking the foundation

C. Water contamination

D. Faster bearing

47. A pad needs three feet of fill, and the builder must place it to avoid settlement. The fill must be placed in:

A. Thin successive lifts, each compacted

B. One deep layer compacted at the surface

C. A single saturated pour

D. Loose form left to settle

48. Sediment washes off a lot into a storm drain, and the inspector cites the builder. The missing control was a:

A. Silt fence along the down-slope edge

B. Curing blanket

C. Vapor retarder

D. Roof underlayment

49. A rectangular foundation shows unequal diagonals, and the builder must interpret this. It means the layout is:

A. Perfectly square

B. Too small

C. Sloped toward the street

D. Out of square and must be adjusted

50. A heavy two-story house sits on moderate soil, and the builder must size the footing. To keep soil pressure within capacity, the footing must be made:

A. Wider to spread the load

B. The same width as the wall

C. Narrower to save concrete

D. Thinner than the wall

51. A homeowner asks when the new foundation reaches full design strength, and the builder answers. The expected time is:

A. 1 day

B. 3 days

C. 28 days

D. 90 days

52. Steel rebar is placed in a foundation wall, and the builder explains its role. The rebar provides:

A. Compressive strength only

B. A paint-bonding surface

C. Tensile strength the concrete lacks

D. Curing moisture

53. Rebar is found exposed at the concrete surface and beginning to rust, and the builder identifies the defect. The defect is inadequate:

A. Slump

B. Curing temperature

C. Aggregate size

D. Concrete cover over the steel

54. A 2:12 low-slope roof is planned, and the builder checks a covering rated for a 4:12 minimum. The builder concludes the covering:

A. May be used with no special measures

B. Is ideal at 2:12

C. Sheds water faster at 2:12

D. May not be used at 2:12 without special provisions

55. A snowy northern region home is being designed, and the builder must identify the governing roof load. That load is the:

A. Snow load

B. Wind uplift load

C. Seismic load

D. Construction live load

56. A spec names a specific product, and a sub substitutes a cheaper "equal" without approval. The builder identifies this as:

A. Standard acceptable practice

B. An unauthorized substitution and potential breach

C. A required cost-saving step

D. Permitted because products are similar

57. Drawings and specifications conflict on a material, and the builder must resolve it. The builder consults the:

A. Supplier's catalog

B. Framing subcontractor

C. Contract documents' order of precedence

D. Local utility

58. A printed dimension reads 30'-0" but scaling yields 29'-9", and the builder must choose. The builder uses the:

A. Scaled measurement

B. Average of both

C. Written dimension

D. Larger value

59. A roof diaphragm must resist uplift, and the builder must understand what creates it. It is created when:

A. Insulation is installed at the ceiling

B. Sheathing is properly fastened across the roof framing

C. The vapor retarder is applied

D. Gutters are attached

60. A deck is attached to a house, and the builder must specify the ledger fastening. The correct method is:

A. Closely spaced common nails

B. Construction adhesive only

C. Hand-driven wood screws

D. Through-bolts or approved lag screws, then flashed

61. A deck collapses, and investigation points to the most failure-prone connection. That connection is the:

A. Footing-to-post

B. Joist-to-beam

C. Ledger-to-house

D. Decking-to-joist

62. A stair is built with 8½-inch risers, and the inspector rejects it. The maximum residential riser height is about:

A. 10 inches

B. 7¾ inches

C. 12 inches

D. 5 inches

63. A landing 40 inches above the floor below has no barrier, and the builder must respond. The builder must install a guard because the drop exceeds:

A. 12 inches

B. 30 inches

C. 60 inches

D. 6 inches

64. A deck guard has balusters 5 inches apart, and the inspector fails it. The openings must be reduced to reject a sphere of:

A. 4 inches

B. 6 inches

C. 8 inches

D. 12 inches

65. A masonry fireplace is built without the noncombustible floor area in front, and the builder must add it. The required element is a:

A. Hearth extension

B. Larger flue liner

C. Second damper

D. Taller chimney cap

66. An attached garage door to the house is hollow-core with no self-closer, and the builder must correct it. The door must be:

A. Glazed with clear glass

B. Propped open for ventilation

C. Self-closing, tight-fitting, and of an approved type

D. Made lighter for ease of use

67. A new pool gate does not self-latch, and the builder must correct the barrier. The gate must be:

A. Propped open in daylight

B. Self-closing and self-latching, opening away from the pool

C. Removable without tools

D. Latched at child height

68. A permit-exempt shed is built over the rear setback line, and the builder learns it must still comply with:

A. Commercial sprinkler rules

B. Local zoning setback requirements

C. High-rise standards

D. Elevator accessibility codes

69. An engineered I-joist must be bored for a drain, and the builder must set the limit. The hole may be made only:

A. Anywhere convenient

B. At the framer's discretion

C. Within the manufacturer's specified allowances

D. Regardless of load

70. A grade stamp is reviewed on delivered lumber, and the builder notes what it does NOT show. The stamp does not show the:

A. Species group

B. Moisture condition

C. Grading agency

D. Required span in the building

71. A worker on a roof needs fall protection, and the builder must apply the trigger height. In construction, protection is generally required at:

A. 4 feet and above

B. 6 feet and above

C. 10 feet and above

D. 20 feet and above

72. A trench 6 feet deep must be entered, and the builder must protect the worker. The recognized methods are sloping, shoring, and:

A. Painting the walls

B. Adding water

C. Removing the spoil pile only

D. Shielding with a trench box

73. A worker will cut concrete and masonry, and the builder must control the dust hazard. The hazard is respirable silica, best controlled by:

A. PPE alone with no source control

B. Dry cutting in open air

C. Source controls (wet cutting or vacuum) plus respiratory protection

D. Ignoring it as harmless

74. A chemical hazard is present, and the builder must inform workers under HazCom. Workers are informed through training, labels, and:

A. A blower-door test

B. A surety bond

C. A lien waiver

D. Safety Data Sheets

75. A hazard exists on site, and the builder applies the hierarchy of controls. The most effective response is to:

A. Provide PPE

B. Post a sign

C. Train the workers

D. Eliminate the hazard

76. A worker uses a personal fall arrest system, and the builder must verify the components. The system requires a:

A. Body belt alone

B. Full-body harness, lanyard, and secure anchor

C. Single hand grip

D. Rope around the waist

77. An extension ladder is set against a wall, and the builder applies the angle rule. The correct setup follows the:

A. 1:1 rule

B. 2:1 rule

C. 4:1 rule (1 foot out per 4 feet up)

D. 8:1 rule

78. A scaffold is erected, and the builder must verify it is safe before use. It must be fully planked and inspected by a:

A. Random worker

B. Competent person

C. Material supplier

D. The homeowner

79. A homeowner asks why a heat pump uses less energy than baseboard heat, and the builder explains. The heat pump:

A. Burns fuel more completely

B. Stores electricity

C. Operates only in mild weather

D. Moves heat rather than generating it

80. An oversized furnace is installed "to be safe," and the builder warns of the consequence. The system will:

A. Run efficiently at peak

B. Use less energy

C. Short-cycle and control humidity poorly

D. Last far longer

Section 2: Business and Law (Questions 81–130)

81. A job costs $20,000, and the builder needs a $5,000 profit. After computing the markup, the builder quotes a price of:

A. $20,250

B. $24,000

C. $26,000

D. $25,000

82. A job sells for $40,000 with $8,000 profit, and a competitor claims this is a "20% markup." The builder corrects them: the $8,000 is a 20% margin but a markup of:

A. 20%

B. 25%

C. 16%

D. 40%

83. A balance sheet shows assets of $400,000 and equity of $250,000, and the builder must find the liabilities. The liabilities equal:

A. $650,000

B. $400,000

C. $150,000

D. $250,000

84. A builder forming a business wants both personal-asset protection and pass-through taxation, and must choose an entity. The best fit is a:

A. Limited liability company

B. Sole proprietorship

C. General partnership

D. C-corporation

85. A sole proprietor loses a lawsuit exceeding business assets, and the builder learns the consequence. This structure exposes:

A. The owner's personal assets

B. Only the business bank account

C. Nothing, the entity is separate

D. The licensing board

86. A builder's income statement shows $700,000 revenue and $640,000 expenses, and the owner asks the net profit. It is:

A. $1,340,000

B. $700,000

C. $60,000

D. $640,000

87. A struggling builder considers spending withheld payroll taxes to make payroll, and the accountant warns against it. These funds are:

A. The employer's to keep

B. A loan from the employee

C. Trust-fund money held for the government

D. Tax-exempt revenue

88. A worker is directed in all tasks, paid weekly, and uses company tools, and the builder must classify them. The control indicates the worker is:

A. An employee

B. An independent contractor by preference

C. A volunteer

D. Exempt from payroll taxes

89. A builder carries general liability insurance and a license bond, and a client confuses the two. The builder explains insurance protects the:

A. Public from the contractor

B. Surety from the owner

C. Board from the builder

D. Insured builder against its own losses

90. A bonded contractor defaults and the surety pays the owner, and the builder explains what follows. The surety then:

A. Absorbs the loss permanently

B. Seeks reimbursement from the contractor

C. Bills the licensing board

D. Charges the lender

91. An employee is injured on site, and the builder identifies the coverage that pays for it. That coverage is:

A. Builder's risk

B. A performance bond

C. General liability for the structure

D. Workers' compensation

92. A builder wins low bids covering only direct costs and wonders why money is tight, and the accountant explains. The business is failing to recover:

A. Sales tax

B. The deposit

C. Retainage

D. Overhead in the price

93. A homeowner and builder sign an agreement exchanging work for payment, and the builder names the element. That element is:

A. Consideration

B. Acceptance

C. Capacity

D. Assent

94. A large remodel is agreed verbally and a dispute arises, and the builder learns the requirement. Under the Statute of Frauds it generally must be:

A. In writing to be enforceable

B. Notarized

C. Recorded with the county

D. Approved by the board

95. A builder signs a fixed-price contract and faces higher costs, and must absorb the difference. In a lump-sum contract the overrun is borne by the:

A. Owner

B. Lender

C. Contractor

D. Supplier

96. A homeowner agrees to reimburse actual costs plus a fee, and the builder identifies who bears cost risk. In cost-plus, the risk falls on the:

A. Owner

B. Contractor

C. Subcontractor

D. Surety

97. A client verbally asks for a mid-project skylight, and the builder must protect payment. The builder should:

A. Execute a written, signed change order first

B. Bill it at closeout

C. Rely on the verbal request

D. Wait until the warranty period

98. A new home has a defect the contract never stated, yet the builder is liable, and the builder names the principle. This is an:

A. Express warranty

B. Implied warranty imposed by law

C. Optional purchased warranty

D. Warranty waived at closing

99. A contract specifies arbitration, and the builder distinguishes it from mediation. Arbitration:

A. Is always free

B. Must precede negotiation

C. Produces a binding decision

D. Cannot use a neutral

100. A state requires an exam and insurance for licensure, and the builder identifies the purpose. The purpose is to:

A. Raise revenue for the board

B. Protect the public through competence and accountability

C. Limit the number of contractors

D. Guarantee income

101. An unlicensed person performs licensed work and sues for nonpayment, and the builder predicts the outcome. The court may:

A. Award double damages

B. Bar them from enforcing the contract or collecting

C. Issue a license automatically

D. Exempt them from codes

102. A contractor commits repeated serious violations, and the board takes the most severe action. That action is:

A. A written warning

B. A continuing-education order

C. Revocation

D. A temporary suspension

103. An unpaid drywall sub files a claim against the home, and the builder names it. The claim, attached to the property, is a:

A. Mechanic's lien

B. Performance bond

C. License complaint

D. Surety claim

104. A homeowner who already paid the GC is liened by an unpaid sub, and the builder explains how. This is possible because the lien attaches to the:

A. Contractor's license

B. GC's bond only

C. Real property itself

D. Owner's bank account

105. A supplier waits too long and loses lien rights, and the builder identifies the most common reason. It is:

A. Poor-quality work

B. Missing a strict filing or enforcement deadline

C. Charging too little

D. Wrong ink color

106. A GC pays a sub and obtains a document releasing the sub's lien rights, and the builder names it. It is a:

A. Lien waiver

B. Performance bond

C. Change order

D. Title transfer

107. A homeowner cancels a door-to-door remodeling contract the next day, and the builder identifies the right. This is a:

A. Statute-of-Frauds requirement

B. Mechanic's lien right

C. Workers' comp provision

D. Cooling-off period under consumer-protection law

108. A builder spends one client's project funds on another job, and the board characterizes the act. It is:

A. A normal practice

B. Acceptable if disclosed verbally

C. Permitted on cost-plus jobs

D. Both an ethical breach and often a legal violation

109. A builder maps the schedule and finds the chain of dependent tasks setting the completion date, and names it. It is the:

A. Material delivery route

B. Critical path

C. Shortest task

D. Electrical pathway

110. A non-critical task can be delayed within limits without affecting the finish date, and the builder names this slack. It is:

A. Float

B. Markup

C. Retainage

D. Overhead

111. A builder's accountant explains profits are taxed once on the owners' returns, and the builder names the treatment. It is:

A. Double taxation

B. Tax exemption

C. Entity-level-only taxation

D. Pass-through taxation

112. A lender wants a year-end statement of what the business owns and owes, and the builder provides it. That statement is the:

A. Income statement

B. Cash flow statement

C. Job-cost report

D. Balance sheet

113. A profitable builder cannot make payroll because clients pay slowly, and the lesson is identified. The leading cause of contractor failure is:

A. Running out of cash

B. Excessive material quality

C. Too few subcontractors

D. Building too many homes

114. To match cash in with cash out during a build, the builder structures payment, and identifies the tool. That tool is:

A. A single closeout payment

B. No interim payments

C. A reduced total price

D. Progress payments tied to milestones

115. A builder reconciles a balance sheet and confirms the equation, and states it. The equation is:

A. Revenue minus expenses equals profit

B. Cash in minus cash out equals reserve

C. Assets equal liabilities plus equity

D. Markup plus cost equals price

116. A builder applies a percentage to job cost to set the price, and names it. This percentage on cost is:

A. Markup

B. Margin

C. The overhead rate

D. The break-even point

117. A 50% markup on a $10,000 cost is applied, and the builder converts it to a margin of the selling price. That margin is about:

A. 50%

B. 33%

C. 25%

D. 15%

118. Overhead must be recovered in every price, and the builder defines it. Overhead is the cost that:

A. Is charged to one project

B. Is not directly chargeable to a single specific job

C. Comes only from materials

D. Applies only to subs

119. A labor estimate must reflect true cost, and the builder selects the correct rate. The estimate uses the:

A. Bare hourly wage

B. Material cost as a proxy

C. Burdened labor rate including taxes and benefits

D. Owner's salary alone

120. A bid is priced below true cost, and the builder predicts the result. The bid will:

A. Always lose

B. Guarantee profit

C. Have no effect

D. Win the job but lose money

121. A drawing view shows the internal assembly of a wall from foundation to roof, and the builder names it. It is the:

A. Section

B. Floor plan

C. Elevation

D. Plot plan

122. Concrete and excavation quantities must be ordered correctly, and the builder identifies the unit. The unit is:

A. Square feet

B. Linear feet

C. Cubic yards

D. Board feet

123. A builder converts cubic feet to cubic yards for a concrete order, and applies the factor. There are how many cubic feet in a cubic yard?

A. 27

B. 9

C. 12

D. 36

124. A schedule's critical path is delayed by one day, and the builder predicts the effect on the project. The whole project will:

A. Be delayed by one day

B. Finish on time anyway

C. Finish a day early

D. Be unaffected

125. A builder must decide whether to require a written contract for a major job, citing both law and prudence. The strongest reason is that a written contract:

A. Is never legally required

B. Only benefits the owner

C. Slows the project unnecessarily

D. Documents scope and price and may be legally required

126. A change order is needed for added work, and the builder determines its timing. It must be written and signed:

A. After the work is complete

B. Before the changed work proceeds

C. At project closeout

D. Only if a dispute arises

127. A bathroom receptacle near the sink needs shock protection, and the builder selects the device. The correct device is a:

A. AFCI

B. Surge suppressor

C. Tamper-resistant cover alone

D. GFCI

128. A home with a gas water heater and attached garage needs detection, and the builder installs it. The required device is:

A. A second smoke alarm only

B. A radon system

C. Carbon monoxide alarms near sleeping areas

D. A garage sprinkler

129. A builder must keep ground moisture out of a slab floor, and selects the measure. The correct measure beneath the slab is a:

A. Curing compound

B. Vapor retarder

C. Reinforcing mesh alone

D. Granular base alone

130. A builder confirms a footing bears below the frost line and on competent soil, then must size its width for the load. Width is governed by the load and the soil's:

A. Color

B. Temperature

C. Moisture content alone

D. Bearing capacity

Answer Key with Full Answer Explanations

Section 1: Trade and Technical

1. A — Volume = 60 × 2 × 1 = 120 cubic feet; 120 ÷ 27 = 4.44 cubic yards. Concrete is ordered by the cubic yard. Forgetting the 27-per-yard divisor gives the wrong order.

2. D — Convert 4 inches to 0.333 ft; volume = 20 × 30 × 0.333 = 200 cubic feet; 200 ÷ 27 = 7.4 cubic yards base, then add the 5% waste. The correct order is the base volume plus the waste allowance. Both the conversion and the waste factor matter.

3. A — Slope = 8 ft rise over 32 ft run = 1:4 = 3:12 (3 inches of rise per 12 inches of run). At exactly 3:12 the shingle rated for a 3:12 minimum may be used. Slope is expressed per 12 inches of run.

4. D — At the baseline 1:150 ratio, 4,500 ÷ 150 = 30 square feet of net free vent area. Splitting it equally between soffit and ridge (15 square feet each) satisfies the balanced-intake-and-exhaust arrangement but does not change the total required area. Net free area is the basis for the calculation.

5. C — At 16 inches on center over 32 feet (384 inches), 384 ÷ 16 = 24 spaces, plus one stud to close the end = 25 common studs. This excludes the opening's king, jack, and cripple studs. Spacing coordinates with 4-foot panels.

6. C — Finding organic topsoil at the bearing depth requires excavating deeper to competent soil or using engineered fill. Pouring on organics, adding water, or stronger concrete do not fix the bearing problem. Organics decay and compress.

7. D — A wall retaining 8 feet of backfill must be braced or supported before backfilling, with the wall sized for the full retained height. Backfilling first, immediately, or undersizing the wall causes failure. Brace first, backfill second.

8. B — To keep strength while improving placement, use a water-reducing admixture rather than adding water. Adding water raises the water-cement ratio and weakens the mix. Dry cement and pouring it unadjusted are not the fix.

9. A — A slab in hot, dry, windy weather must be kept moist during curing to allow hydration to develop strength. Letting it dry, exposing it to sun, or walking away interrupt hydration. Proper moist curing delivers design strength.

10. D — A wet basement from a grade sloping toward the house with no drain is best corrected by regrading away from the foundation and adding a perimeter drain. Interior paint, attic ventilation, and a larger water heater do not address the cause. Surface and subsurface drainage work together.

11. A — A rotting sill on damp concrete must be replaced with pressure-treated or naturally durable lumber with a capillary break. A concrete cap, painted same lumber, or a thicker untreated plate do not solve the moisture issue. Concrete wicks moisture that rots untreated wood.

12. A — A nominal 2×10 has an actual depth of 9¼ inches, the dimension the pocket must clear. Nominal 10 inches is incorrect. Calculations use actual dimensions.

13. C — To stiffen a bouncy floor without changing joist size, decrease the spacing between joists. Lower grade, wider spacing, and reduced bearing all worsen capacity. Closer spacing increases capacity.

14. C — A 3-inch hole in the bottom edge of a joist at mid-span must be rejected, as that is the worst location for bending and tension. Holes do not help, mid-span is restricted, and boring the top edge does not cure it. Notching and boring are strictly limited.

15. A — The header carries the load around a wide opening and transfers it to the jack studs. Cripples, the rough sill, and the sole plate serve other roles. This is the core opening load path.

16. A — The nailing schedule at panel edges and field develops the wall's shear capacity. Paint, R-value, and window placement do not. Under-nailed sheathing cannot resist racking.

17. B — A snow load travels from the roof through the rafters and walls to the foundation and soil. It does not travel through plumbing, the panel, or gutters. The load path must be continuous to the ground.

18. A — A hurricane tie connects the roof to the walls to resist uplift in a coastal home. Anchor bolts and sill sealer tie the wall to the foundation, and hold-downs anchor shear walls. Each connector addresses a specific link.

19. D — Walls bowing outward indicate missing ceiling joists or rafter ties, which resist rafter thrust. The covering, ridge vent, and gutters do not perform this. A structural ridge beam is the alternative.

20. B — A truss web may be cut only with the truss engineer's approval, so the builder must refuse otherwise. Cutting because a web remains, for ductwork, or at the framer's discretion can cause failure. Each member is sized for the balanced system.

21. A — At the 1:150 baseline, 1,500 ÷ 150 = 10 square feet of net free vent area. The ratio may improve to 1:300 with balanced venting. Baffles keep soffit intakes clear.

22. C — Eave leaks after a freeze indicate a missing ice barrier membrane at the eaves. A ridge vent, drip edge alone, or gutter guard do not prevent ice-dam leaks. The ice barrier is a cold-climate requirement.

23. C — A roof leak most likely originates at a valley, penetration, or chimney flashing. The field, ridge, and sheathing underside are less likely. These transitions depend on flashing.

24. D — A leaking caulked penetration is lastingly repaired with proper flashing, because flashing sheds water by design while caulk degrades. More caulk, field shingles, or a ridge vent do not seal the penetration. Flashing, not caulk, is the solution.

25. B — A downspout saturating the foundation soil must be extended to discharge well away from the foundation. Connecting to an attic drain is nonsensical, waterproofing alone is not a license to dump water there, and a smaller gutter does not help. Roof drainage should reinforce foundation protection.

26. B — Each upper course of housewrap must overlap the piece below for down-and-out drainage, shingle-fashion. Caulking all edges, tucking behind, or random installation are wrong. Reversed laps funnel water into the wall.

27. C — Brick veneer rot from being built tight to the sheathing results from omitting the air space and weep holes that drain absorbed water. Extra ties, interior paint, or a second sheathing layer do not fix trapped water. The veneer is a reservoir cladding.

28. D — Vinyl siding that buckles in heat should have been fastened loosely to allow thermal movement. Painting, omitting housewrap, or lapping behind are not the cause. Nailing it tight causes buckling.

29. B — The window with the lower U-factor insulates better, since U-factor is the rate of heat conduction. A higher U-factor, higher SHGC, or larger glass area do not mean better insulation. Lower U-factor means better performance.

30. D — A glass panel beside the front door must be tempered or laminated safety glazing. A smaller pane, frosted glass, or single-pane clear glass do not satisfy the safety requirement. Safety glazing breaks safely.

31. D — An emergency escape opening must meet limits for clear area, width, height, and maximum sill height above the floor. Glass tint, frame color, and U-factor are not egress criteria. Every sleeping room needs a compliant opening.

32. C — Compressing an R-30 batt into a shallow bay reduces its effective R-value by diminishing the insulating air space. It does not increase R-value, fire rating, or strength. Insulation must fill the cavity fully.

33. B — Continuous exterior rigid foam interrupts thermal bridging through the studs. More cavity batt, extra drywall, or paint do not stop the bridge. Foam over the sheathing blocks heat that bypasses the cavity.

34. D — In a heating climate, the vapor retarder goes on the warm interior side of the insulation to prevent condensation on the cold sheathing. The cold exterior, cladding face, or both faces are wrong. Climate-specific placement prevents condensation.

35. B — A tight home with poor air quality and high humidity needs whole-house mechanical ventilation. More insulation, a larger heater, or more cladding do not provide ventilation. Tight construction requires controlled fresh air.

36. C — A bath fan discharging into the attic must be rerouted to discharge outdoors. The ridge, soffit, and crawlspace are all interior or near-interior terminations that cause moisture damage. Every fan ducts to an exterior termination.

37. A — A moldy, decaying crawlspace must be vented to the exterior or sealed and conditioned with a ground cover. Gravel, bare soil, or a second slab do not control moisture properly. A half-and-half approach traps moisture.

38. B — Supply piping in an uninsulated cold attic is at chief risk of freezing and bursting. Excess pressure, trap-seal loss, and corrosion are not the chief risk. Such piping should be in the conditioned envelope or insulated.

39. C — Sewer gas from a rarely used floor drain is most likely from an evaporated trap seal, refilled with water. Supply pressure, a frozen line, or an oversized vent are not the cause. The trap seal blocks gas only while water remains.

40. C — A sink that gurgles and loses its trap seal has a missing or inadequate vent allowing siphoning. Trap orientation, regulator failure, and an oversized drain are not the issue. Traps and vents work as a pair.

41. B — A larger breaker on the same wire would allow the conductor to overheat and risk fire. It does not solve the problem safely or increase capacity. Breaker and wire size must match.

42. A — A kitchen receptacle near the sink requires a GFCI to guard against shock. A standard breaker, surge suppressor, or tamper-resistant cover do not provide that protection. GFCIs protect people near water.

43. C — AFCI devices on bedroom circuits guard against fires caused by arcing faults. They do not address shock, surges, or tampering. GFCIs protect people; AFCIs protect property.

44. B — CO alarms in a home with a gas furnace and attached garage must be located near each separate sleeping area. The garage only, attic only, or meter do not protect sleeping occupants. Smoke alarms do not detect CO.

45. D — A backdrafting appliance in a tight home is corrected by providing combustion air or using a sealed-combustion unit. Sealing tighter, removing alarms, or blocking the vent worsen the hazard. Combustion safety requires air and proper venting.

46. B — Footings only 12 inches deep where the frost line is 42 inches will suffer frost heave cracking the foundation. Slow curing, water contamination, and faster bearing are not the failure. Footings must bear below the frost line.

47. A — Three feet of fill must be placed in thin successive lifts, each compacted before the next. A deep surface-compacted layer, a saturated pour, or loose fill all settle later. Lift compaction prevents settlement.

48. A — Sediment washing into a storm drain indicates a missing silt fence along the down-slope edge. A curing blanket, vapor retarder, and roof underlayment are unrelated. Silt fence is a primary sediment-capture measure.

49. D — Unequal diagonals mean the layout is out of square and must be adjusted, since a true rectangle has equal diagonals. It is not square, undersized, or sloped based on this. Equalizing the diagonals squares the footprint.

50. A — A footing for a heavy house on moderate soil must be made wider to spread the load within the soil's bearing capacity. The same width, a narrower footing, or a thinner one would overload the soil. Width is governed by load and bearing capacity.

51. C — Concrete is expected to reach full design strength at 28 days of proper curing. One, three, or 90 days are not the standard reference. It gains strength rapidly early and reaches design strength at 28 days.

52. C — Rebar in a foundation wall provides the tensile strength concrete lacks. It is not for compressive strength alone, paint bonding, or curing. Concrete is strong in compression but weak in tension.

53. D — Rebar rusting at the surface indicates inadequate concrete cover over the steel. Slump, curing temperature, and aggregate size do not cause this. Adequate cover protects the steel from corrosion.

54. D — A covering rated for a 4:12 minimum may not be used on a 2:12 roof without special provisions. It is not ideal there and does not shed water faster at low slope. Match covering to slope.

55. A — In a snowy northern region, the snow load governs roof sizing. Wind uplift governs in hurricane regions, and seismic and construction loads are not the typical governing case. Local design values set the requirement.

56. B — Substituting a cheaper "equal" for a named product without approval is an unauthorized substitution and potential breach. It is not standard practice, required, or automatically permitted. Approval is needed for substitutions.

57. C — A conflict between drawings and specifications is resolved by the contract documents' order of precedence. The supplier's catalog, subcontractor, and utility do not govern. When in doubt, the builder submits an RFI.

58. C — When a written dimension differs from a scaled measurement, the builder uses the written dimension. Paper distorts and copies scale inaccurately. Written dimensions always govern.

59. B — A roof diaphragm is created when sheathing is properly fastened across the roof framing. Insulation, vapor retarders, and gutters do not create it. Its strength depends on fastening.

60. D — A deck ledger must be fastened with through-bolts or approved lag screws, then flashed. Nails, adhesive, and hand-driven screws are inadequate. The ledger is the leading cause of catastrophic collapse.

61. C — The ledger-to-house connection is most responsible for catastrophic deck collapse. The footing, beam, and decking connections are less commonly the failure point. The ledger must be bolted and flashed.

62. B — A stair with 8½-inch risers exceeds the maximum of about 7¾ inches. Ten, twelve, and five inches are incorrect. Risers must also be uniform across the flight.

63. B — A 40-inch-high open landing requires a guard, since the drop exceeds 30 inches. Twelve, sixty, and six inches are not the threshold. Guards prevent falls off open edges.

64. A — Guard openings must reject a 4-inch sphere, so 5-inch baluster spacing must be corrected. Six, eight, and twelve inches are wrong. Wide spacing is a child-entrapment and fall hazard.

65. A — A fireplace without the noncombustible floor area needs a hearth extension to protect the floor from sparks. A larger flue, second damper, or taller cap do not address floor protection. The hearth extension is a fire-safety feature.

66. C — A hollow-core garage door without a self-closer must be replaced with one that is self-closing, tight-fitting, and of an approved type. Glazing, propping it open, or making it lighter do not satisfy the fire and CO barrier. It is a life-safety requirement.

67. B — A pool gate must be self-closing and self-latching, opening away from the pool. Propping it open, making it removable, or latching at child height fail. The gate is critical to preventing child drownings.

68. B — A permit-exempt shed over the rear setback must still comply with local zoning setback requirements. Commercial, high-rise, and elevator rules do not apply. Setbacks always apply.

69. C — An engineered I-joist may be bored only within the manufacturer's specified allowances. Boring anywhere convenient, at the framer's discretion, or regardless of load can cause failure. Each member is sized for its role.

70. D — A grade stamp does not show the required span in the building; it shows species, moisture, grade, agency, and mill. The span is determined from span tables. The stamp guides member selection.

71. B — In construction, fall protection is generally required at 6 feet and above. Four, ten, and twenty feet are not the trigger. Falls are the leading cause of construction deaths.

72. D — A 6-foot trench requires sloping, shoring, or shielding with a trench box. Painting the walls, adding water, or removing only the spoil pile are not protective systems. A competent person inspects the excavation.

73. C — Silica dust from cutting concrete and masonry is best controlled by source controls (wet cutting or vacuum) plus respiratory protection. PPE alone, dry cutting, or ignoring it are unsafe. Source control comes before PPE in the hierarchy.

74. D — Under HazCom, workers are informed through training, labels, and Safety Data Sheets. A blower-door test, surety bond, and lien waiver are unrelated. SDSs must be accessible on site.

75. D — In the hierarchy of controls, the most effective response is to eliminate the hazard. PPE, signs, and training are lower in the hierarchy. PPE is the last line of defense.

76. B — A personal fall arrest system requires a full-body harness, lanyard, and secure anchor. A body belt, hand grip, or rope around the waist are not acceptable. The full-body harness distributes arrest forces safely.

77. C — An extension ladder follows the 4:1 rule — one foot of base offset per four feet of working height. The 1:1, 2:1, and 8:1 ratios are wrong. Proper angle prevents slipping.

78. B — A scaffold must be fully planked and inspected by a competent person before use. A random worker, supplier, or homeowner do not satisfy this. A competent person can identify hazards and correct them.

79. D — A heat pump moves heat rather than generating it, using less energy than baseboard heat. It does not burn fuel, store electricity, or work only in mild weather. This is why it is more efficient.

80. C — An oversized furnace short-cycles and controls humidity poorly. It does not run efficiently, save energy, or last longer. Equipment must be sized to a calculated load.

Section 2: Business and Law

81. D — Markup = profit ÷ cost = $5,000 ÷ $20,000 = 25%; price = $20,000 × 1.25 = $25,000. Markup is a percentage added to cost. The $5,000 profit brings the price to $25,000.

82. B — The $8,000 profit on a $40,000 price is a 20% margin (8,000 ÷ 40,000); as a markup it is 25% of the implied $32,000 cost (8,000 ÷ 32,000). The keyed answer B = 25% reflects the markup. Margin is on price, markup is on cost.

83. C — Liabilities = assets − equity = $400,000 − $250,000 = $150,000, from Assets = Liabilities + Equity. The balance sheet always balances on this identity. Each term is found by rearranging the equation.

84. A — A limited liability company best provides both personal-asset protection and pass-through taxation. A sole proprietorship and general partnership lack protection, and a C-corp faces double taxation. The LLC combines both advantages.

85. A — A sole proprietorship exposes the owner's personal assets to a judgment exceeding business assets. LLCs and corporations provide protection. This liability divide is the key entity distinction.

86. C — Net profit = revenue − expenses = $700,000 − $640,000 = $60,000. The income statement reports profit over a period. Revenue and expenses are the inputs.

87. C — Withheld payroll taxes are trust-fund money held for the government, not available to spend. Spending them is a severe violation that can create personal liability. They must never cover payroll shortfalls.

88. A — Directing all tasks, paying weekly, and supplying tools indicate a high degree of control, classifying the worker as an employee. The label or preference does not control. Misclassification carries penalties.

89. D — Insurance protects the insured builder against its own losses, while a bond protects a third party. The distinction is the key difference. The insurer covers the builder's claims.

90. B — After paying the owner on a default, the surety seeks reimbursement from the contractor. Unlike insurance, the contractor ultimately bears the loss. A bond is a guarantee to a third party.

91. D — Workers' compensation pays for an employee's work-related injuries. Builder's risk covers the structure, and a performance bond guarantees completion. Comp protects employees and is legally required.

92. D — A builder winning low bids that cover only direct costs is failing to recover overhead in the price. Sales tax, the deposit, and retainage are not the issue. Every price must carry overhead plus profit.

93. A — The element exchanging work for payment is consideration. Acceptance, capacity, and assent are separate elements. Consideration is the most-tested element.

94. A — Under the Statute of Frauds, a large remodel contract generally must be in writing to be enforceable. Notarization, recording, and board approval are not the requirement. A writing protects against fraudulent claims.

95. C — In a lump-sum (fixed-price) contract, the contractor bears the cost overrun. This is why accurate estimating is critical. A cost-plus contract shifts that risk to the owner.

96. A — In a cost-plus contract, the owner bears the risk of higher costs because they reimburse actual costs plus a fee. A guaranteed maximum price can cap that exposure. The contract type determines who carries cost risk.

97. A — To protect payment for a verbal skylight request, the builder should execute a written, signed change order first. Billing at closeout or relying on the verbal request invites disputes. Documentation protects both parties.

98. B — A defect the contract never stated for which the builder is still liable reflects an implied warranty imposed by law. It binds the builder regardless of any written promise. Express warranties, by contrast, are stated.

99. C — Arbitration produces a binding decision, unlike mediation, which is non-binding. An arbitration award is enforceable like a court judgment. This is the key difference.

100. B — Requiring an exam and insurance serves the purpose of protecting the public through competence and accountability. It is not about revenue, limiting competition, or guaranteeing income. Every licensing rule flows from public protection.

101. B — An unlicensed person performing licensed work may be barred from enforcing the contract or collecting payment. This can forfeit the right to be paid. Unlicensed contracting is a serious violation.

102. C — The most severe disciplinary action for repeated serious violations is revocation. A warning, CE order, or suspension are lesser or temporary. Revocation permanently cancels the license.

103. A — An unpaid sub's claim attached to the home is a mechanic's lien. It is not a bond, license complaint, or surety claim. Attaching to the property gives the unpaid party leverage.

104. C — An unpaid sub can lien a home the owner already paid the GC for because the lien attaches to the real property itself. It is not against the license, the bond only, or the bank account. Owners protect themselves with lien waivers.

105. B — Lien rights are most often lost because the claimant missed a strict filing or enforcement deadline. Poor work, low charges, and ink color are not the reason. The law imposes unforgiving timeframes.

106. A — A document releasing a paid sub's lien rights is a lien waiver. It is not a bond, change order, or title transfer. Waivers are exchanged for payment.

107. D — Cancelling a door-to-door contract the next day is a cooling-off period under consumer-protection law. It is not a Statute-of-Frauds requirement, lien right, or comp provision. It protects homeowners in home-solicitation sales.

108. D — Spending one client's funds on another job is both an ethical breach and often a legal violation. It is not a normal practice or acceptable on any contract type. Project funds belong to that project.

109. B — The chain of dependent tasks setting the completion date is the critical path. It is not the delivery route, shortest task, or wiring path. Delaying any critical-path task delays the project.

110. A — Slack on a non-critical task is called float. Markup, retainage, and overhead are financial terms. Float allows some delay without affecting the finish date.

111. D — Profits taxed once on the owners' returns describe pass-through taxation. This avoids the double taxation of a C-corporation. Most LLCs, sole proprietorships, partnerships, and S-corps are pass-through.

112. D — The balance sheet shows what the business owns and owes at year-end. The income and cash flow statements cover periods of activity. Each statement serves a distinct purpose.

113. A — A profitable builder who cannot make payroll because of slow collections illustrates that running out of cash is the leading cause of failure. Profit and cash are not the same. Progress draws and reserves bridge the gap.

114. D — Progress payments tied to milestones match cash in with cash out during a build. A single closeout payment or no interim payments worsen the cash gap. Progress draws are essential to construction cash flow.

115. C — The balance sheet reconciles using Assets = Liabilities + Equity. The other formulas are not the balance-sheet identity. This equation always holds.

116. A — A percentage applied to job cost to set the price is the markup. Margin is on price, the overhead rate covers operating costs, and break-even is a volume measure. Markup is on cost.

117. B — A 50% markup on a $10,000 cost gives a $15,000 price and $5,000 profit, which is about 33% of the selling price. The denominators differ (cost versus price). Mistaking markup for margin causes underpricing.

118. B — Overhead is the cost not directly chargeable to a single specific job. It is not charged to one project, only materials, or only subs. It must be recovered across all jobs.

119. C — A labor estimate uses the burdened labor rate, including payroll taxes, comp, insurance, and benefits. The bare wage, material cost, or owner's salary alone under-price labor. The burden adds a substantial percentage to the wage.

120. D — A bid priced below true cost will win the job but lose money. It does not always lose, guarantee profit, or have no effect. Underbidding wins work the builder cannot afford to build.

121. A — The section view shows the internal assembly of a wall from foundation to roof, as a vertical cut. The floor plan, elevation, and plot plan show other perspectives. Each view answers a different question.

122. C — Concrete and excavation quantities are ordered in cubic yards. Square feet, linear feet, and board feet apply to other quantities. There are 27 cubic feet in a cubic yard.

123. A — There are 27 cubic feet in a cubic yard. Nine, twelve, and thirty-six are wrong. This conversion is essential for ordering concrete and excavation.

124. A — Delaying a critical-path task by one day delays the whole project by one day. It does not finish on time, early, or unaffected. The critical path controls the completion date.

125. D — The strongest reason to require a written contract for a major job is that it documents scope and price and may be legally required under the Statute of Frauds. It is sometimes legally required, benefits both parties, and protects the builder. A writing prevents and resolves disputes.

126. B — A change order for added work must be written and signed before the changed work proceeds. After completion, at closeout, or only on dispute are too late. Documentation protects both parties.

127. D — A bathroom receptacle near the sink requires a GFCI to guard against shock. An AFCI, surge suppressor, or tamper-resistant cover alone do not provide ground-fault protection. GFCIs protect people near water.

128. C — A home with a gas water heater and attached garage requires carbon monoxide alarms near sleeping areas. A second smoke alarm, radon system, or garage sprinkler do not satisfy this. Smoke alarms do not detect CO.

129. B — A vapor retarder beneath a slab keeps ground moisture out of the floor. A curing compound, reinforcing mesh, or granular base alone do not perform this. The retarder is the moisture block.

130. D — Footing width is governed by the load and the soil's bearing capacity. Color, temperature, and moisture content alone do not govern width. The footing spreads load to stay within the soil's capacity.