

CPCBC4010B APPLY STRUCTURAL PRINCIPLES TO RESIDENTIAL LOW RISE CONSTRUCTIONS & CPCBC4011B APPLY STRUCTURAL PRINCIPLES TO COMMERCIAL LOW RISE CONSTRUCTIONS

THEORY EXAM INSTRUCTIONS

- This exam will occur under standard assessment conditions.
 - An oral examination may be allowed under certain circumstances whereby the Participant's answers will be documented by a party other than the Participant. This must be acknowledged in writing (e.g. F1001 and Assessor Comments)
- Participants must provide enough detail in their responses to demonstrate their knowledge and skills.
- Please fill in the details below, providing your name, signature and date of assessment.
 - Your signature acknowledges that this is your own work.
- Assessors are to complete marking in pen of a different colour to the Participant.
- If a Participant initially answers a question incorrectly but modifies their response, they must follow the instructions below:
 - If a Participant changes their response in writing, they must put their initials next to the written change.
 - If a Participant changes their response verbally, this must be noted on the exam paper by the assessor.

Participant name

Participant signature

Date

Assessor name

Assessor signature

Date

Number of questions	Number of questions answered correctly	Task outcome (Tick)	
93		Satisfactory	Not Yet Satisfactory
		☐	☐

Assessor Comments:

Q1. What is the most important aspect in the design of buildings?
Tick your response.

Answer	Choice	Possible Answers	☐
		Aesthetics	
		Cost	
		Location	
	✓	Stability	

Q2. Where can the definitive properties of materials used in the building industry be found? Tick your response.

Answer	Choice	Possible Answers	☐
	✓	Australian Standards	
		Building journals	
		Practical learning on the job	
		Textbooks on building	

Q3. Which industry professional would you contact for structural advice?
Tick your response.

Answer	Choice	Possible Answers	☐
		Architect	
		Draftsperson	
	✓	Engineer	
		Quantity surveyor	

Q4. Which industry professional would you contact for the preparation of working drawings? Tick your response.

Answer	Choice	Possible Answers	☐
		Building surveyor	
	✓	Draftsperson	
		Quantity surveyor	

Q5. Briefly describe the role of an architect.

Answer

Architects are people who design buildings and in many cases they also supervise their designed construction projects. They help to set a viable and realistic budget, guide clients and builders through the planning process and obtain competitive quotes and manage consultants.

☐

Q6. What is the difference between a building surveyor and a land surveyor?

Answer

Building surveyors provide advice on property and construction. They work on the design, development and restoration/maintenance of buildings.

☐

A Land Surveyor assesses the rise and fall and contour of surrounding terrain and landscape for the purpose of development. They can be involved in taking levels on a site to produce contour plans, determining location of existing buildings/ features on a site, setting out the building line, marking the location of columns or the external perimeter of a building, checking the vertical alignment of a building during construction, conducting boundary surveys and re-establishment of survey pegs and checking the positioning and overall height of a structure at completion to ensure compliance with the conditions of permits.

Q7. Which industry professional would you contact for matters relating to cost? Tick your response.

Answer

Choice	Possible Answers
☐	Architect
☐	Building surveyor
☐	Engineer
☒	Quantity surveyor

☐

Q8. A land surveyor is to reinstate survey pegs. Which of the following documents would the surveyor need? Tick your response.

Answer	Choice	Possible Answers	☐
	☒	Title	
	☐	Contour plans	
	☐	Project specifications	

Q9. When preparing a trench a builder digs through a gas pipe which was not shown on the plans. Which report should be used to prove the mistake was not the builder's? Tick your response.

Answer	Choice	Possible Answers	☐
	☐	Engineer's drawings	
	☒	Condition report	
	☐	Soil report	

Q10. Which two (2) of the following can be determined from the contour report? Tick your responses.

Answer	Choice	Possible Answers	☐
	☒	Extent of cut and fill	
	☒	Height of retaining walls	
	☐	Location of trees	
	☐	Location of windows	

Q11. The customer has requested a glass balcony. Which document would the builder refer to for information on structural members? Tick your response.

Answer	Choice	Possible Answers	☐
	☐	Building specifications	
	☐	Condition report	
	☒	Engineering report	

Q12. The builder is planning a project and requires information on the location of fixtures and fittings, windows and doors. Which plans show this information? Tick your response.

Answer	Choice	Possible Answers	☐
		Cross sections	
	✓	Floor plans	
		Footing designs	

Q13. After an inspection, the client believes that what was installed is different to what they had chosen in the contract. What document details the materials the builder was meant to use? Tick your response.

Answer	Choice	Possible Answers	☐
	✓	Building specifications	
		Plan of the subdivision	
		Site plan	

Q14. What key pieces of information can be found on a site plan? Tick all that apply.

Answer	Choice	Possible Answers	☐
	✓	Location of street frontage	
	✓	Location of proposed building	
	✓	North point	

Q15. What is the purpose of a footing design?

Answer	Footing plans provide details on footing depths and widths, slabs and stiffening beams and the type and positioning of steel reinforcement.		☐

Q16. Why would a pre-commencement site inspection be conducted?
Tick your response.

Answer	Choice	Possible Answers	☐
	✓	To ensure all contract documentation clearly reflects the actual site	
		It allows the supervisor to get some fresh air	
		To ensure that the client actually owns the property	
		So that levels can be taken to check the slope of the site	

Q17. What are the dead loads in a building? Tick your response.

Answer	Choice	Possible Answers	☐
		All stationary materials	
	✓	Permanent materials	
		Roofing materials	
		Use for which the building is intended	

Q18. What is the formula for calculating a dead load?

Answer	Dead load = Volume of member x Unit weight of materials (supplied)	☐

Q19. What are the live loads in a building? Tick your response.

Answer	Choice	Possible Answers	☐
	✓	Loads arising from the function of the structure	
		Loads due to rain	
		Loads due to wind	
		Utility services	

Refer to the table shown below to respond to Q20. to Q21. These values are used to calculate live loads using the formula: Area of floor x Live load rating.

Live loads for floors as per building usage	Uniformly distributed load (kPa or kN/m ²)
Houses	1.5
Flats, motel bedrooms, apartments	2.0
Offices	3.0
Workshops	5.0
Parking, vehicle >2.5t	5.0
Hospitals, school assembly areas with fixed seating	3.0
Dance halls, bars, lounges	5.0

Q20. Calculate the live load of a guest house measuring 23m x 8m. Show your calculations.

Answer

$$(23 \times 8) \times 1.5$$

$$= 276\text{kN}$$



Q21. Calculate the live load of a commercial office premises floor measuring 33m x 11m. Show your calculations.

Answer

$$(33 \times 11) \times 3$$

$$= 1089\text{kN}$$



Please refer to the information below in responding to Q22. to Q25.

There is a building 21m long x 10m wide x 8m high with a 25° pitched gable roof. The rafter line on the metal clad roof measures 5.5m on the rafter line (from the fascia/gutter line up to the ridge line).

The wind load is calculated as *Area of surface x Wind load rate*. The wind load rates are as follows:

- Windward wall is 21 metres long x 8 metres high with a wind load rate of +1.5kN/m²;
- Leeward wall is 21 metres long x 8 metres high with a wind load rate of -0.8kN/m²;
- Windward roof with a wind load rate of +0.8kN/m²; and
- Leeward roof with a wind load rate of -1.5kN/m²

Q22. What is the wind load of the windward wall? Tick your response.

Answer

Choice	Possible Answers
	-252kN
	134.4kN
✓	252kN
	86.4kN

☐

Q23. What is the wind load for the leeward wall? Tick your response.

Answer

Choice	Possible Answers
✓	-134.4kN
	-94.2kN
	252kN
	134.4kN

☐

Q24. What is the wind load for the leeward roof? Tick your response.

Answer

Choice	Possible Answers
✓	-173.25kN
	92.4kN
	173.25kN
	-134.4kN

☐

Q25. What is the wind load for the windward roof? Tick your response.

Answer

Choice	Possible Answers
	252kN
	-92.4kN
	-252kN
✓	92.4kN

☐

Q26. Explain the term 'load path' in reference to a building.

Answer

Load path is simply the direction in which each consecutive load will pass through connected members. The sequence commences at the highest point of the structure working all the way down to the footing system, ultimately transferring the total load of the structure to the foundations. Ultimately, the lowest structural member must be strong enough to support all members above it.



Q27. Forces are represented as vectors and have three (3) properties. Name these properties.

Answer

- 1) Magnitude – the size of the force;
- 2) Direction – the direction of the force; and
- 3) Position – the bodily effect (on the structure) by the force.



Q28. Name five (5) structural members that a building may consist of.

Answer

Assessor's discretion. May include:

1. Footing systems (including bearers, joists, piers, columns, beams, stumps, rafts, waffle pod, reinforcement, piles)
2. Floor systems (compressed sheet wet area, joists, fitted floors, platform floors, sheet flooring, tongue and groove flooring, concrete slab, brick base, timber, steel)
3. Structural wall systems (e.g. cavity brick, concrete block, structural steel, timber, tilt-slab, post and beam, pole and truss, portal frame, masonry walls, bracing)
4. Wall cladding systems (boarding, coatings over base materials, sheeting, tilt-slab, masonry)
5. Roof systems (trusses, frames, tiles, sheeting)
6. Retaining walls



Q29. What should be considered when determining the shape and type of material to use?

Answer

1. The materials' mechanical properties such as strength, toughness, elasticity, plasticity, ductility, malleability, brittleness, hardness; and
2. The materials section properties based on the mathematical properties of the structural shapes used.

☐

Q30. Match the mechanical properties and definitions below by writing the appropriate letter next to each number in the centre column.

Answer

Mechanical properties		Answers	Definitions	
1	Brittleness	1 - G	A	The resistance the structural member is able to offer the load that will just cause fracture.
2	Elasticity	2 - C	B	The resistance to a fracture point of a material by repeated bending or twisting after yield point has passed.
3	Ductility	3 - E	C	Present if a material deforms with loading and then returns to its original shape when the loads are removed.
4	Hardness	4 - H	D	If a material deforms when loaded and does not return to its original shape when the load is removed, causing permanent deformation.
5	Malleability	5 - F	E	Enables a material to be drawn out in the direction of its length.
6	Plasticity	6 - D	F	Can be hammered or otherwise worked into various shapes.
7	Strength	7 - A	G	Causes material to break or snap off without any noticeable lengthening.
8	Toughness	8 - B	H	The degree of resistance to indentation or abrasion.

☐

Q31. Match the beam types and descriptions by writing the appropriate letter next to each number in the centre column.

Answer

Beam type		Answers	Description	
1	Cantilevered	1 - A	A	Overhang their supports.
2	Continuously supported	2 - C	B	Supported at each end only.
3	Simply supported	3 - B	C	Supported by 3+ support points.

☐

Q32. Match the column considerations and explanations by writing the appropriate letter next to each number in the centre column.

Answer	Column consideration	Answers	Explanation	
	1 Axially loaded column	1 - A	A The load is central to the centre of gravity axis.	☐
	2 Buckling	2 - E	B The load is off-centre, resulting in bending and compressing stress being applied to the column.	
	3 End fixity and effective length	3 - C	C The rigid connection to other members at the top and bottom affects the way a column buckles.	
	4 Non-axially loaded column	4 - B	D Affects the maximum load a column can be allowed to support.	
	5 Slenderness ratio	5 - D	E Occurs at the weakness axis unless a lateral restraint is used to prevent it.	

Q33. Explain how a column is in compression.

Answer ☐ A column is part of the load path in compression - that is a crushing downward force is being applied to the top of and then in a vertical downward direction through the column, stump or post length which is transferred from all above it. Roof, walls and sub floor and then into the foundation and then dispersed into the surrounding soil and then an upward resistance applied by gravity from the soil in which the foundation sits to create equilibrium in the forces being applied from the load path.

Q34. Explain the letters 'CHS' and 'SHS' with reference to columns.

Answer ☐ CHS refers to circular hollow section.
SHS refer to square hollow section.

Q35. Match the retaining wall types and descriptions by writing the appropriate letter next to each number in the centre column.

Answer	Retaining wall	Answers	Description	
1	Cantilevered retaining wall	1 - B	A Leans into the excavated soil and constructed at an angle between 45 and 80 degrees. Typically constructed from brickwork or pre-cast interlocking concrete units.	☐
2	Gravity retaining wall	2 - C	B Relies upon the correct placement of steel reinforcement and varying thickness of concrete to resist the soil pressure.	
3	Inclined retaining wall	3 - A	C Relies on its own weight to resist soil forces. Typically constructed from stone, brickwork or concrete.	

Q36. What is a ground level concrete slab floor?

Answer A ground level concrete slab is a large flat stretch of concrete, which forms the foundation of the structure. It is poured directly into excavated trenches and relies on the existing ground for support. ☐

Q37. What should you consider when selecting the type of slab floor?

Answer The type of slab you'll need will depend on the type of soil you're building on, and how reactive it is. ☐

Q38. True or False (Tick your response): Concrete slab floors are popular in the construction of structures because they take less time to construct.

Answer

☒	True
☐	False

☐

Q39. Match the following slab structural performance terms with the descriptions by writing the appropriate letter next to each number in the centre column.

Answer	Term	Answers	Description	
1	Foundation movement	1 - C	A Placed along the perimeter of the slab. Design is influenced by the reactivity of the soils.	☐
2	Slab bending	2 - B	B Movement is classified as dishing or doming.	
3	Stiffening beams	3 - A	C Addressed by regulating the moisture content of the soil.	

Q40. Which of these terms relate to a roof truss? Tick your response.

Answer	Choice	Possible Answers	
		Chord, knee, web	
		Spider, pitch, chord	
		Ankle, heel, tar	
	✓	Web, heel, pitch	☐

Q41. What are important considerations when undertaking demolition work? Describe relevant legislation, regulations and/or Codes of Practice relating to planning requirements, environmental standards, and safe work practices.

Answer	It is important that any demolition work of existing structures is done in accordance with legislative and planning requirements. Safe and environmentally friendly work practices are a vital part of the demolition process (e.g. following the <i>Work Health and Safety Regulations 2011</i> (Qld)). In Queensland, demolition should observe the requirements of the Demolition work Code of Practice 2013. The following may need to be obtained, depending on the type of demolition work: - A licence from QBCC - Permits from the Local Council	☐
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Q42. When demolition is being undertaken, which of the following items must be checked daily? Tick all that apply.

Answer	Choice	Possible Answers	☐
	✓	All boundaries are secured against unlawful entry	
	✓	All hazardous materials are removed or covered as required by OHS legislation	
	✓	All openings and elevated free edges are properly guarded	
	✓	All potential fire and safety hazards are eliminated and disconnected services are secured	
		Asbestos is left on the nature strip for the garbage pickup	
	✓	Demolished materials have not been left on any floor or structure if their weight exceeds the safe carrying capacity of the floor or structure	
	✓	Emergency access routes are clear of debris	
	✓	Footpaths and public access are clear of demolished materials	
		Neighbours have been notified not to hang out their washing	
	✓	No structure or part of a structure is left in such a condition that it may become dangerous, such as collapse due to wind or vibration	
	✓	Partly demolished elements are stabilised and loose materials are secured against bad weather	
		Signs and balloons are in place for the garage sale	
		Tell the demolisher to take a long lunch break as you don't need supervision	
	✓	Temporary hoardings, bracing, shoring and propping is tight and secure and in place as required to protect both workers and public	

Q43. Identify two (2) requirements under the NCC with regards to construction in bushfire prone areas?

Answer Assessor's discretion. ☐

Q44. What does AS3959 refer to?

Answer [AS 3959 Construction of buildings in bushfire prone areas provides a method of assessing the bushfire risk of a site by categorising the building's exposure to ember attack, radiant heat and direct flame contact.](#) ☐

Q45. Which of the following can assist with providing sufficient restraint to transfer wind forces to the ground to prevent collapse, uplift or sliding off the footing systems? Tick all that apply.

Answer ☐

Choice	Possible Answers
✓	Anchorage systems
✓	Bracing systems
✓	Connecting structural elements together

Q46. Which Australian Standard outlines the requirements of high wind areas?

Answer [AS 1170.2](#) ☐

Q47. The acceleration coefficient is a number which indicates the expected severity of the earthquake ground movement. Which Australian Standard should be referenced for this information?

Answer [AS 1170.4](#) ☐

Q48. True or False (Tick your response): Where the acceleration coefficient is greater than 0.15, there are additional NCC requirements than where the acceleration coefficient is 0.12.

Answer ☐

✓	True
	False

Q49. Which of the following areas require specific compliance in alpine areas? Tick all that apply.

Answer	Choice	Possible Answers	☐
	✓	Access bridges	
	✓	Access for emergency vehicles	
	✓	External doorways	
	✓	External ramps	

Q50. Identify the Volume and Parts of the NCC that relate to each of the following areas for Classes 1 and 10, and Classes 2 to 9.

Answer	Topic	Classes 1 and 10	Classes 2 to 9	☐
	Bushfire	Volume 2, Part 3.10.5	Volume 1, Part G5	
	High wind	Volume 2, Part 3.0.4	Volume 1, Part B1	
	Earthquake	Volume 2, Part 3.10.2	Volume 1, Part B1	
	Alpine area	Volume 2, Part 3.10.4	Volume 1, Part G4	
	New technologies	Volume 2, Parts A2.2 and A5	Volume 2, Parts A2.2 and A5	

Q51. How are emerging building technologies and methods assessed in the National Construction Code? Tick all that apply.

Answer	Choice	Possible Answers	☐
	✓	Using verification methods	
	✓	With 'deemed to satisfy' provisions	
	✓	With documentary evidence	

Q52. True or False (Tick your response): Footings should be set out in accordance with the building plan.

Answer

✓	True
	False

☐

Q53. Name three (3) different types of footing systems for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Assessor's discretion. May include: Columns or stumps; Concrete slab floors; Piers and beams	Assessor's discretion. May include: Concrete slab floors; Drilled or driven piles; Mass concrete piers; Reinforced concrete piers and beams; Screw piles; Waffle pod slabs

☐

Q54. Identify the Volume and Parts of the NCC that relate to footings (including damp coursing and provision of termite barriers) for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Parts 3.1, 3.2	Volume 1, Parts B1.4, F1.9, F1.10

☐

Q55. For each of the following identify two (2) Australian Standards that relate to footings.

Answer

Classes 1 and 10	Classes 2 to 9
AS2870, AS/NZS 2904, AS3660	AS/NZS 2904, AS3660

☐

Q56. Name two (2) materials that may be used for damp proof coursing.

Answer ☐

- Corrosion resistant metal (e.g. aluminium, copper or zinc)
- Impact resistant plastics (e.g. polyethylene)

Q57. Name two (2) termite resistant materials.

Answer ☐
 May include: Steel, aluminium or other metals, concrete, masonry, fibre-reinforced cement, naturally/treated timbers

Q58. Name three (3) different types of floor systems for Classes 1 and 10, and Classes 2 to 9.

Answer ☐

Classes 1 and 10	Classes 2 to 9
Assessor's discretion. May include: Concrete slab floor Compressed sheet wet area flooring Fitted (cut-in) floors Platform floor construction Tongue and groove flooring	Assessor's discretion. May include: Concrete slab floors (suspended and slab-on ground) Brick bases Engineered timber products Panel systems of concrete and AAC Timber and steel floor construction

Q59. What should be considered when constructing a floor system?

Answer ☐
 When constructing the floor system it is important to take into consideration the type of flooring, the laying of pipes, cabling, sewerage, drainage, telecommunications and reinforcement.

Q60. Which Australian Standard is referenced in Volumes 1 and 2 of the NCC regarding the requirements for slabs and footings?

Answer ☐
 AS 2870

Q61. Name three (3) different types of materials used for wall systems or structures falling under Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Assessor's discretion. May include: Cavity brick; Concrete block; Structural steel; Timber	Assessor's discretion. May include: Composite walls (i.e. tilt-slab, post and beam, pole and truss, portal frame); Earth walls (i.e. rammed earth and mud brick); Framed walls (i.e. timber, lightweight section steel); Masonry walls (i.e. cavity brick, single-leaf masonry, AAC)

☐

Q62. Identify the Volume and Parts of the NCC that relate to masonry wall systems for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Part 3.3.1	Volume1, Part B1.4

☐

Q63. Which Australian Standard is referenced in Volumes 1 and 2 of the NCC regarding masonry structures?

Answer

AS 3700

☐

Q64. Explain the purpose of bracing.

Answer

Bracing is attached to studs and rafters to provide lateral support to wall and roof framing. Metal straps, timber or sheet bracing can be used for bracing. Bracing enables framework to resist horizontal forces (load resistance of live, dead and wind loads).

Types of bracing may including – permanent, temporary and nominal wall bracing.

☐

Q65. Explain the purpose of fixings and tie-downs.

Answer ☐ Fixings are necessary to ensure the structural adequacy of the interconnection of the various framing members. Tie-down fixings stop the lateral loads in floor, wall and roof framing. Where specific tie-down fixings provide equal or better resistance to gravity or shear loads, nominal nailing is not required.

Q66. Which Australian Standard relates to timber frames, bracing and fixings?

Answer ☐ AS 1684

Q67. For the Australian Standard in Q66. which part relates to cyclonic areas?

Answer ☐ Part 3

Q68. Which of the following should be observed when checking the quality of the frame (whether, factory pre-cut and pre-nailed, factory pre-cut and assembled on site, or cut and assembled on site)? Tick all that apply.

Answer ☐

Choice	Possible Answers
☒	Fixings must be protected from corrosion
☐	Fixings must be protected from termites
☒	Provision has been made for plumbing services and fixtures
☐	Tie downs and nominal nailing must both be present
☒	Top and bottom plates have a tight fit on studs
☐	Top plate is to be reinforced when rafters land on top of plates
☒	Walls are tied together
☒	Walls are plumb
☒	Walls are square

Q69. True or False (Tick your response): Sarking is a substitute for cladding and is regarded as the principal means of weatherproofing.

Answer

	True
✓	False

☐

Q70. What is flashing?

Answer

Flashings are used at corners and vertical joints and around openings to ensure that water is prevented from penetrating the wall frame cavity. Typical places would be in wet areas of the home including bathroom basins, showers, baths, toilets, laundries and kitchens are examples.

☐

Q71. Identify the Volume and Parts of the NCC that relate to wall cladding material requirements for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Part 3.5.4	Volume 1, Specification J1.2

☐

Q72. True or False (Tick your response): Timber can stand greater stresses than brickwork.

Answer

✓	True
	False

☐

Q73. True or False (Tick your response): Individual timber boards for cladding should be nailed together at the overlap.

Answer

	True
✓	False

☐

Q74. When should flashing materials be fixed to plywood cladding?
Tick your response.

Answer	Choice	Possible Answers	☐
		After the cladding is fixed	
	✓	Before the cladding is fixed	
		While the cladding is being fixed	
		At any convenient time	

Q75. What is the purpose of articulation joints? Tick your response.

Answer	Choice	Possible Answers	☐
		They allow for shrinkage in a building	
		They tie the brickwork to the frame	
	✓	They allow for movement in a building	
		They seal the cavities	

Q76. When is the most appropriate time for the rough-in to occur for a brick veneer building constructed on a concrete slab Tick your response.

Answer	Choice	Possible Answers	☐
	✓	Before brickwork	
		After brickwork	
		After plasterboard	
		Any time	

Q77. Apart from plumbing and electrical, name four (4) other services that should be considered at rough-in.

Answer ☐
Assessor's discretion. May include: Ducting for heating and cooling;
communication systems; extractive vacuum and exhaust systems; passive
and active fire detection and prevention systems; powered systems for
operating doors and windows; smoke control and containment systems.

Q78. Identify the Volume and Parts of the NCC that relate to window installation for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Parts 3.6, 3.12.3.3	Volume 1, Parts B1.4, F1.13, J3.4

☐

Q79. Name two (2) Australian Standards that relate to the installation of windows.

Answer

AS 1288

AS 2047

☐

Q80. What is the purpose of a window schedule? Tick your response.

Answer

Choice	Possible Answers
	To help work out the appropriate type of window
✓	To work out the appropriate opening size of windows
	To work out whether to use a timber or aluminium frame
	To work out the height of a window

☐

Q81. Identify the Volume and Parts of the NCC that relate to door installation for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Part 3.6.4.1	Volume 1, Part D2.19

☐

Q82. What Australian Standard must the design of a timber roof truss adhere to?

Answer

AS 1720

☐

Q83. What is a roof system? Name three (3) roof types.

Answer

A roof is the structure that forms the roof or cover of a building. In Australia the roof system may be made up of a timber frame roof built in-situ on-site or it may be a prefabricated truss roof in which major components are constructed in a factory and then erected on-site. Trusses can be either made from timber or from steel fabrications.

☐

The types of roof systems might include: Gable, Hip, Skillion.

Q84. True or False (Tick your response): Roof trusses can be modified on site to suite different needs.

Answer

	True
✓	False

☐

Q85. Devise a checklist for ensuring the quality of an installed roof frame.

Answer

Assessor's discretion. May include:

☐

- Rise and pitch of roof against plan
- Correct propping of ridge, hips, valleys, rafters and under purlins at correct centres
- Adequate collar ties Straight line of sight for rafter, hips and valleys
- Support to strutting beams and under purlins at correct centres
- Fascia and barge boards are correctly fitted
- All tie-downs and fixings are installed and tightened
- Ceiling joist are straight and in alignment with companion rafters
- Hanging beams are properly installed
- Trimmers for are fitted in required locations
- Trimmers fitted to manhole

Q86. **Devise a checklist for ensuring the quality of an installed roof truss.**

Answer

Assessor's discretion. May include:

☐

- Truss layout plan
- Manufacturer's specifications for tie-downs, bracings and stability
- Roof truss certification
- Adequacy of supporting structure
- Dimension, overall width and length of wall for fit
- Support to girder trusses
- Plumb and spacings
- Location of specialised trusses
- Trusses have not been modified on-site
- Eave overhangs
- Trimming to manhole.

Q87. **Name three (3) roof cladding materials.**

Answer

Assessor's discretion. May include: Brick veneer; tiles (concrete, clay, metal), sheeting.

☐

Q88. **What pitch of roof should roof tiles be applied? Are there exceptions?**

Answer

Roof tiles can generally be used on roofs of 15° or greater pitch, however, some materials and methods of manufacture require 25° or greater pitch. Manufacturer's specifications for their products should be adhered to.

☐

Q89. When installing corrugated metal roof sheeting, which is the preferred direction of laying sheets to improve side lap effectiveness for minimising leakage? Tick your response.

Answer	Choice	Possible Answers	☐
		Away from the prevailing weather	
		Towards the north	
	✓	Towards the prevailing weather	

Q90. True or False (Tick your response): Sarking is advisable under any roof.

Answer	✓	True	☐
		False	

Q91. What Australian Standard relates to sarking?

Answer Should reflect one (1) of: AS/NZS 4256; AS 4200 ☐

Q92. Name three (3) items that may require roof penetration.

Answer Services (e.g. ducts, plumbing, electrical service lines) ☐
Skylights
Roof ventilators

Q93. Identify the sections/parts of NCC Volume 1 that relate to the installation of skylights.

Answer Section J ☐
Part 4F