CPCCBC4001A
APPLY BUILDING CODES AND STANDARDS TO THE CONSTRUCTION PROCESS FOR LOW RISE BUILDING PROJECTS

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. FT001 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)	
38		Satisfactory	Not Yet Satisfactory
		☐	☐

Assessor Comments:

Q1. **A Performance Solution must abide by which of the following? Tick all that apply.**

Answer

Choice	Possible Answers
✓	Be assessed according to one or more of the Assessment Methods
	Go beyond the requirements of Deemed-to-Satisfy Provisions
✓	Comply with the Performance Requirements

Q2. **True or False (Tick your response): The Performance Requirements of the National Construction Code can be achieved by using a Performance Solution, a Deemed-to-Satisfy Solution, or a combination of both.**

Answer

✓	True
	False

Q3. **True or False (Tick your response): The term 'Performance Solution' in the NCC was formerly known as 'Alternative Solution'.**

Answer

✓	True
	False

Q4. **Where a Performance Solution has been proposed, which of the following documentation should be prepared and retained? Tick all that apply.**

Answer

Choice	Possible Answers
✓	Details of the relevant Performance Requirements
✓	Assessment Methods used to establish compliance with the relevant Performance requirements
✓	Details of any Expert Judgement relied upon
✓	Details of any tests of calculations used to determine compliance with the Performance Requirements
✓	Details of any Standards or other information which were relied upon

Q5. **True or False (Tick your response): Where a Deemed-to-Satisfy solution has been proposed, all relevant plans/specifications should be retained.**

Answer

✓	True
	False

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Q6. **Identify the Volume and Parts of the NCC that outline the Assessment Methods used to determine whether a Performance Solution or a Deemed-to-Satisfy Solution complies with the Performance Requirements for Classes 1 and 10, and Classes 2 to 9.**

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Part A2.2	Volume 1, Part A2.2

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Q7. **Identify the Australian Standard that relates to artificial lighting needed for safe movement, as noted in the NCC.**

Answer AS/NZS 1680 ☐

Q8. **Identify the Volume and Parts of the NCC that outline the requirements for artificial lighting needed for safe movement for Classes 1 and 10, and Classes 2 to 9.**

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Part 3.8.4.3	Volume 1, Part F4.4

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Q9. **Fill in the blanks for the statement below, referring to Volume 1 of the NCC with regards to lighting:**

Where a Deemed-to-Satisfy Solution is proposed, Performance Requirements ___FP4.1___ to ___FP4.5___ are satisfied by complying with

(i) ___F4.1___ to ___F4.12___; and

(ii) For a building containing an occupiable outdoor area, ___Part G6___; and

(iii) for farm buildings and farm sheds, ___Part H3___.

Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with ___A2.2(3)___ and ___A2.4(3)___ as applicable.

Answer ☐

Q10. **Fill in the blanks for the statement below, referring to Volume 2 of the NCC with regards to light:**

Where an alternative light system is proposed as a Performance Requirement to that described in ___Part 3.8.4___, that proposal must comply with –

(a) Performance Requirement ___P2.4.4___; and

(b) the relevant Performance Requirements determined in accordance with ___A2.2(3)___ and ___A2.4(3)___ as applicable.

Answer ☐

Q11. **Identify the Australian Standard that relates to each of the listed types of fire fighting equipment, as noted in the NCC.**

Answer ☐

Equipment	Australian Standard
Fire hydrants	AS 2419
Fire hose reels	AS 2441
Portable fire extinguishers	AS 2444
Smoke alarms	AS 3786

Q12. **For each of the listed types of fire fighting equipment, identify whether they are required by the NCC (if so, identify the relevant Part).**

Answer

Equipment	Volume 1	Volume 2
Fire hydrants	Part E1.3	Not required
Fire hose reels	Part E1.4	Not required
Portable fire extinguishers	Part E1.6	Not required
Smoke alarms	Specification E2.2a	Part 3.7.5

Q13. **Identify the applicable Act in your jurisdiction that outlines the requirements for smoke alarm installation in domestic dwellings. Briefly identify the requirements.**

Answer

Act name and section(s)	Requirements
Assessor's discretion. For example, Fire and Emergency Services Act 1990 (Qld) Division 5A	Section 104RBA: Owner must install smoke alarm to a domestic dwelling. Section 104RBB: Provides alternative compliance with smoke alarm requirements. Section 104RC: Owners must replace smoke alarms within 10 years after the day the smoke alarm was manufactured.

Q14. **Identify the applicable Act in your jurisdiction that outlines the requirements for testing smoke alarms in domestic dwellings. Briefly identify the requirements.**

Answer

Act name and section(s)	Requirements
Assessor's discretion. For example, Fire and Emergency Services Act 1990 (Qld) Division 5A	Section 104RRA: A smoke alarm installed in a domestic dwelling must be tested by pressing a button to indicate whether the alarm is capable of detecting smoke; or in the way stated in the manufacturer's specifications; or by a tenant of the dwelling in the way stated in the information statement.

Q15. **Identify the applicable Act in your jurisdiction that outlines what must occur if smoke alarm in a domestic dwelling does not operate upon testing and when any rectification must occur. Briefly identify the requirements.**

Answer

Act name and section(s)	Requirements
Assessor's discretion. For example, Fire and Emergency Services Act 1990 (Qld) Section 104RC	The owner of the dwelling must immediately replace a smoke alarm does not operate when tested. If the smoke alarm being replaced was hardwired to the dwelling's electricity supply, the replacement smoke alarm must also be hardwired.

Q16. **In observation of NCC Volume 2, identify three (3) aspects which should be checked with regards to smoke alarms.**

Answer

Should include: Location; Connection to mains power; Interconnection where there is more than one alarm.

Q17. **Must all smoke alarms be interconnected in domestic dwellings? Explain your response with reference to legislation.**

Answer

Assessor's discretion. In Queensland, the *Fire and Emergency Services Act 1990* (Qld) requires interconnected photoelectric smoke alarms:

- From 1 January 2017: In all new dwellings and substantially renovated dwellings;
- From 1 January 2022: In all domestic dwellings leased or sold
- From 1 January 2027: In all other domestic dwellings

Q18. **Fill in the blanks for the definition of fire compartments, referring to Volume 1 of the NCC:**

Fire compartment means –

(a) The total space of a building; or

(b) When referred to in –

(i) The Performance Requirements – any part of a building separated from the remainder by ___barriers___ to fire such as ___walls___ and/or ___floors___ having an appropriate resistance to the spread of fire with any ___openings___ adequately protected; or

(ii) The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by ___walls___ and/or ___floors___ each having an ___FRL___ not less than that required for a fire ___wall___ for that type of construction and where all ___openings___ in the ___separating___ construction are protected in accordance with the DtS Provisions of the relevant Part.

Answer

Q19. **Identify the Volume and Parts of the NCC that outline the requirements for fire compartmentation and separation for Classes 1 and 10, and Classes 2 to 9.**

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Parts 3.7.2, 3.7.3 & 3.7.4	Volume 1, Part C2

Q20. **Fill in the blanks for the statement below, referring to Volume 1 of the NCC with regards to fire compartmentation and separation:**

Where a Deemed-to-Satisfy Solution is proposed, Performance Requirements CP1 to CP9 are satisfied by complying with

(i) C1.1 to C1.14 C2.1 to C2.14 and C3.1 to C3.17; and

(ii) in a building containing an atrium, Part G3; and

(iii) for additional requirements for Class 9b buildings, Part H1; and

(iv) for farm sheds, Part H3.

Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2.2(3) and A2.4(3) as applicable.

Answer

Q21. **Fill in the blanks for the statement below, referring to Volume 2 of the NCC with regards to fire separation:**

Where an alternative fire separation design is proposed as a Performance Solution to that described in Part 3.7.2 that proposal must comply with Performance Requirement P2.3.1; and the relevant Performance Requirements determined in accordance with A2.2(3) and A2.4(3) as applicable.

Answer

Q22. **Identify the Australian Standard referenced in NCC Volume 1 with regards to compartmentation and separation for electricity supply systems.**

Answer AS/NZS 3013

Q23. **Identify the Volume and Parts of the NCC that outline the level of fire resistance required for Classes 1 and 10, and Classes 2 to 9.**

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Part 3.7	Volume 1, Section C

Q24. **In a building's specifications, an FRL is stated as being 90 / 60 / -. If exposed to a standard fire test, how many minutes can you expect this building element to last for the criteria listed below?**

Answer

Minutes	Criteria
-	Insulation
60	Integrity
90	Structural adequacy

Q25. **Fill in the blanks:**

According to NCC Volume 1, an electricity substation located within a building must be separated from any other part of the building by construction having an FRL of no less than 120 / 120 / 120 and have any doorway in that construction protected with a self-closing fire door having an FRL of not less than - / 120 / 30.

Answer

Q26. **Fill in the blanks:** According to NCC Volume 2, if an electrical wire or cable penetrates a separating wall, the service and building element at the penetration must be identical with a prototype assembly which has been tested and achieve an FRL of not less than - / 60 / 60.

Answer

Q27. **Identify the applicable Act in your jurisdiction that outlines the occupier's requirements for maintaining prescribed fire safety installations (e.g. fire doors). Briefly identify the requirements.**

Answer

Act name and section(s)	Requirements
Assessor's discretion. For example, Fire and Emergency Services Act 1990 (Qld) Section 104D	The occupier must maintain at all times every prescribed fire safety installation to a standard of safety and reliability in the event of fire.

Q28. **Identify the applicable Regulation in your jurisdiction that outlines the timeframes in which repair or corrective action must be taken when maintaining prescribed fire safety installations. Briefly identify the requirements.**

Answer

Regulation name and section(s)	Requirements
Assessor's discretion. For example, Building Fire Safety Regulation 2008 (Qld) Section 54	The occupier must ensure the repair is carried out or the corrective action is taken no later than 1 month after the maintenance of the installation was carried out, unless the occupier has a reasonable excuse.

Q29. **NCC Volume 1 outlines that fire doors must be fitted with smoke seals and the assembly must be tested in accordance with Australian Standards. To which classes of building does this specification apply?**

Answer Classes 5 or 6

Q30. **Do all fire doors require tags? Explain your response with reference to legislation.**

Answer Assessor's discretion. In Queensland, all buildings approved after 1 April 1976 under the *Building Act 1975* require tags to be fitted to the fire doors (new and replaced). Buildings approved before this date are not required to have tags fitted unless required by the local authority at the time of approval.

Q31. **Match the building classifications and their descriptions by writing the appropriate letter next to each number in the centre column.**

Answer

Classification		Answers	Description	
1	Class 1	1 - E	A	A non-habitable building or structure.
2	Class 2	2 - H	B	A laboratory or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing or cleaning of goods or produce is carried on for trade, sale or gain.
3	Class 3	3 - C	C	A residential building other than Class 1 or 2 which is a common place of long term transient living for a number of unrelated persons.
4	Class 4	4 - D	D	A dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.
5	Class 5	5 - F	E	May be a single dwelling or a boarding house, guest hose or hostel with a floor area less than 300m^2.
6	Class 6	6 - G	F	An office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.
7	Class 7	7 – I	G	A shop or other building for the sale of goods by retail or the supply of services direct to the public.
8	Class 8	8 - B	H	A building containing 2 or more sole-occupancy units, each being a separate dwelling.
9	Class 9	9 - J	I	A building which is a carpark or fore storage/display of goods or produce for sale by wholesale.
10	Class 10	10 - A	J	A building of a public nature.

Q32. **What class of building would shops, restaurants and cafes belong to?**

Answer Class 6

Q33. **What class of building would a general medical practitioner's office belong to?**

Answer Class 5

Q34. **True or False (Tick your response): At the design stage, it may not be clear who the final tenant will be (or how they will be using their tenancy), so as long as the design meets the minimum requirements of all the classifications, it could be used for any of the purposes.**

Answer

✓	True
	False

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Q35. **Where parts of a building have different purposes, the classification of Class 1 may apply to the whole building if not more than what percentage of the floor area is used for a purpose which is a different classification? Tick your response.**

Answer

Choice	Possible Answers
	5%
✓	10%
	25%
	50%

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Q36. **The NCC aims to ensure structures appropriately withstand normal forces. Match the terms and definitions below by writing the appropriate letter next to each number in the centre column.**

Answer

Term		Answers	Definitions	
1	Bending	1 - B	A	A force which shortens or crushes.
2	Compression	2 - A	B	A fore which stretches and squashes at the same time.
3	Shear	3 - F	C	A force which tries to pull something apart.
4	Strain	4 - E	D	Intensity of the internally distributed forces that resist a change in the form of a body.
5	Stress	5 - D	E	Physical change in the dimensions of a structure that results from applying a load.
6	Tension	6 - C	F	Created where two opposite forces try to cut, tear or rip something in two.

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Q37. **True or False (Tick your response): When a beam is loaded, the top is compressed and the bottom is in tension.**

Answer

✓	True
	False

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Q38. **True or False (Tick your response): When a cantilever is loaded, the top surface is in tension and the bottom is in compression.**

Answer

✓	True
	False

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