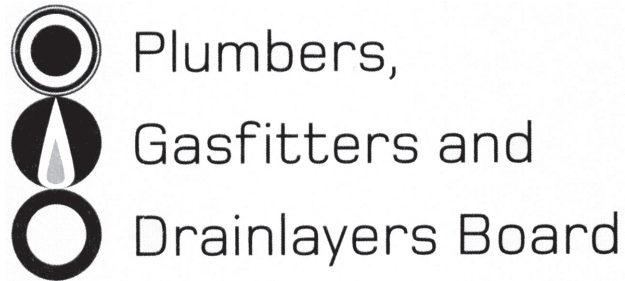


No. 9195



REGISTRATION EXAMINATION, JUNE 2023  
**CERTIFYING PLUMBER**

**ANSWER SCHEDULE**



## ANSWER 1

- (a) A 75 mm  
B 300 mm  
C 50 mm  
D 100 mm (4 marks)

- (b) Cross at not less than 45°. Be marked along its length (for 1 m either side of the crossover point) with tape (150 mm above the water service). (2 marks)

**Total 6 marks**

## ANSWER 2

- (a) 4.64 m.  
(b)  $4.64 + 2.60 + 1.20 + 0.38 + 0.55 = 9.37$  m.  
(c)  $2.60 + 1.20 + 0.38 + 0.55 = 4.73$  m.  
(d)  $2.60 + 1.20 + 0.38 = 4.18$  m.  
(e)  $1.27 + 4.64 + 2.60 + 1.20 + 0.38 + 0.55 = 10.64$  m.

**Total 5 marks**

## ANSWER 3

- (a) 12 months. (1 mark)  
(b) 24 months. (1 mark)  
(c) Any TWO (1 mark each)  
• Tradesman plumber.  
• Journeyman plumber.  
• Provisional licence holder (2 marks)  
(d) A suitably qualified person who performs the physical supervision on behalf of the certifier. (2 marks)

**Total 6 marks**

## ANSWER 4

- (a) Any EIGHT (½ mark each)
- Name and address of employer of the injured person.
  - Name and signature of the person completing the form.
  - Job title of the person completing the form.
  - The location of the accident.
  - The name, address and date of birth of the injured person.
  - The role of the injured person – job title, employee, contractor, etc.
  - Period of employment of injured person.
  - Treatment of injury carried out.
  - Time and date of accident.
  - Hours worked that day before accident occurred.
  - Type of injury occurred.
  - Equipment involved in accident, if any. (4 marks)
- (b) Any THREE (1 mark each) (1 mark)
- Directors.  
Shareholders.  
Board Members.  
Partners.  
Chief Executive.  
Owners.  
Self-employed people. (3 marks)
- (c) Any ONE
- Risk of falling over 5 metres.  
Working with explosives.  
Working while breathing compressed air.  
Working in a tunnel or drive.  
Working in a trench over 1.5 metres deep and narrower than it is wide.  
Asbestos removal. (1 mark)
- (d) WorkSafe. (1 mark)
- (e) At least 24 hours. (1 mark)

**Total 7 marks**

## ANSWER 5

Soil fixtures connected to drain	(2 marks)
Waste fixtures discharge to gully dishes	(3 marks)
Minimum diameters of discharge pipes	(2 marks)
Correct diameter and location of vents	(4 marks)

**Total 11 marks**

## ANSWER 6

- (a) (i) Any THREE (1 mark each)  
Immediately after installation before water is supplied to outlets.  
After any servicing.  
After any suspected backflow occurrence.  
The building warrant of fitness expiry. (3 marks)
- (ii) The building owner. (1 mark)
- (b) Sufficient flow rate for premises.  
Bypass is fitted with an equal or greater form of backflow protection. (2 marks)

(c)

Fitting, fixture, or installation	High	Medium	Low
Hairdressing sink	✓		
Car washing equipment	✓		
Swimming pool		✓	
Dentist spittoon	✓		
Untreated water storage tank		✓	
Irrigation systems with underground controllers		✓	

(3 marks)

**Total 9 marks**

## ANSWER 7

(a)

Situation	Temperature
Supply to a wash hand basin at a pre-school	45°C
Supply to a wash hand basin in a commercial building	55°C
Supply to a bath in a dwelling	55°C
Internal hot water cylinder temperature to prevent the growth of legionella bacteria	60°C

(½ mark each, 2 marks)

(b) (i) 200 litres. (1 mark)

(ii) Within 100 mm of the top and bottom of the cylinder (½ mark)  
and at the centre of the cylinder. (½ mark)

(c) 50 years. (1 mark)

(d) (i) Four. (1 mark)

(ii) Any FIVE (1 mark each)

A 25 mm air gap and tundish must be included before the drain exits the buildings thermal envelope.

Can have no restrictions or valves.

The drain from the tundish to the discharge point must be one size larger than the valve outlet diameter.

Must be in copper.

Must have continuous fall.

Must discharge to a location that does not cause a hazard or damage to other building elements.

(5 marks)

**Total 12 marks**

## ANSWER 8

(a) A pre-approved method of construction or installation that will comply with the New Zealand Building Code. (2 marks)

(b) A pre-approved test or calculation to ensure an installation design will comply with the New Zealand Building Code. (2 marks)

(c) A construction or installation method that has not been pre-approved but that will meet the requirements of the New Zealand Building Code. (2 marks)

**Total 6 marks**

## ANSWER 9

- (a) Drawing has correct connection points, fall etc for:
- |              |           |           |
|--------------|-----------|-----------|
| Relief vents | (2 marks) |           |
| Header vents | (1 mark)  |           |
| Stack vent   | (1 mark)  | (4 marks) |
- (b) Correctly sized:
- |              |           |           |
|--------------|-----------|-----------|
| Relief vents | (4 marks) |           |
| Header vents | (2 marks) |           |
| Stack vent   | (1 mark)  | (7 marks) |
- Total 11 marks**

## ANSWER 10

- (a) Any TWO (½ mark each)
- To prevent vermin entering the tank.
  - To stop condensation damaging the building.
  - To allow access for maintenance.
- (1 mark)
- (b) Any FOUR (1 mark each)
- An overflow pipe discharging to a visible place that will not cause a nuisance.
  - Have a safe tray.
  - Space (350 mm) above the tank to allow access for maintenance.
  - Treated timber to be used for supporting structure.
  - Have sufficient structural support.
  - Seismically restrained.
  - Backflow protection for water supply.
  - Clearance around inlet and outlet pipe work to allow for movement.
- (c) To control the water pressure throughout the building (to protect the plumbing system).  
Can be used instead of ratio valves.
- (1½ marks)
- EITHER
- To provide extra water storage for the building. (½ mark)
  - To provide a method of backflow prevention. (½ mark)
- (d) Calculate effective height of water in tank = 880 mm or 0.88 m (2 marks)
- Area of base of tank =  $0.3 \div 0.8 = 0.3409 \text{ m}^2$  (1 mark)
- Diameter<sup>2</sup> =  $0.3409 \div 0.7854 = 0.434$  (1 mark)
- Diameter =  $\sqrt{0.434} = 0.659 \text{ m} = 659 \text{ mm}$  (1 mark)
- Total 12 marks**

## SECTION B

1. C Eliminate the hazard from the employee's workplace.
2. A To recover plant and equipment from the site.
3. C One heat source.
4. D 100 mm.
5. E Purple.
6. A 450 mm
7. B 500 kPa
8. E Must be higher than that of the cold water expansion valve and lower than that of the cylinder.
9. B 50.
10. B 2× the inlet diameter, or 25 mm, whichever is greater.
11. D 3 months.
12. D 54 m.

**Total 12 marks**