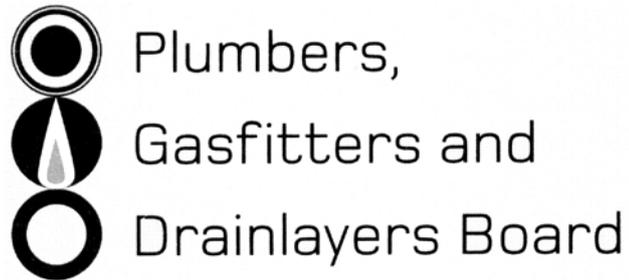


No. 9195



REGISTRATION EXAMINATION, NOVEMBER 2021
CERTIFYING PLUMBER

ANSWER SCHEDULE

ANSWER 1

- (a) When the fixtures are being replaced in either the same or different positions (but no additional fixtures are being added to the installation). (1 mark)
- (b) Either
When additional fixtures are being added to the bathroom.
An automated backflow prevention device connected to the potable water supply is being installed. (1 mark)
- (c) 12 months (1 mark)
- Total 3 marks**

ANSWER 2

- Discharge pipes terminated and sized correctly. (6 marks)
- Vent pipes located and sized correctly. (5 marks)
- Total 11 marks**

ANSWER 3

- (a) The basin vent connects to the toilet vent. When oscillation occurs foul smells from the toilet and drain could be released at low level through the basin waste pipe. (2 marks)
- (b) The middle basin vent is connected to the discharge stack, not the relief vent. This could cause waste to enter and block the basin vent, or the basin could lose its water seal through induced siphonage. (2 marks)
- Total 4 marks**

ANSWER 4

- (a) A PS3 is a statement confirming that work has been completed as per the building consent documents. (1 mark)
- (b) The building consent authority. (1 mark)
- Total 2 marks**

ANSWER 5

Minimum number of people facilities must be provided for	Pool area = 250 m ² . 250 × 0.2 = 50 people Seating area = 1200 - 250 = 950 m ² . 950 × 0.35 = 332.5 - (333) people 333 + 50 = 383 people (3 marks)
Minimum number of females	328.5 × 0.60 = 229.50 - (230) people (½ mark)
Minimum number of males	328.5 × 0.60 = 229.50 - (230) people (½ mark)

	Basins	WC Pans	Urinals
Male	2 + 1 = 3 (2 marks)	3 (1 mark)	3 (1 mark)
Female	2 (1 mark)	3 + 2 = 5 (2 marks)	

Disabled access facilities	
WC Pans	Basins
2 (1 mark)	2 (1 mark)

Total 13 marks

ANSWER 6

- (a) (i) Any TWO (1 mark each):
- Hearing.
 - Exposure to chemicals/solvents.
 - Exposure to lead.
 - Exposure to asbestos.
 - Exposure to hepatitis or other sewage borne diseases. (2 marks)
- (ii) Any FOUR (1 mark each):
- A description of the hazard and possible outcome.
 - A description of how it can cause harm to the employee, including maximum exposure levels and the number of times they will be exposed to the hazard.
 - Only their health in relation to the specific hazard is to be monitored.
 - Any information will be treated in confidence.
 - The results of the monitoring will be made available to them.
 - What will be monitored.
 - How monitoring will occur.
 - When and how frequently monitoring will occur. (4 marks)

(b) ANY TWO (1 mark each):
 To wear all PPE gear required correctly.
 To treat the gear properly.
 To report any damage to gear. (2 marks)

(c) When performing that work is likely to cause harm to the employee. (1 mark)

(d)

	Notifiable work Yes/No
Lifting a 580 kg water tank into place on the top of a 5 metre high tank stand with a block and tackle.	Yes
Working in a contaminated area requiring compressed air breathing equipment.	Yes
Cutting a stone bench top to install a sink and tapware.	No
Working in a trench that is 1.8 metre deep and 2 metres wide.	No
Installing a soaker flashing on the roof of a 12 metre high commercial building.	Yes
Climbing a 6 metre high ladder to clear blocked spouting.	No

(6 marks)

(e) 24 hours (1 mark)
Total 16 marks

ANSWER 7

Total storage required = $\frac{630 \times 0.1 \times 10 \times (42 - 16)}{(70 - 16) \times 80}$ (1 mark)

= $\frac{630 \times 0.1 \times 10 \times 26}{54 \times 80\%}$ (1 mark)

= $\frac{16380}{43.2}$ (1 mark)

= 379.17 litres (1 mark)

Storage required for each cylinder = $379.17 \div 2 = 189.58$ litres (1 mark)

Total 5 marks

ANSWER 8

- (a) When the developed length of the waste pipe from the crown of the water trap to the gully trap is greater than 3.5 m.
When the waste pipe discharges to a combined waste pipe.
Where any 32 mm discharge pipe to a gully trap has a vertical drop of greater than 1.5 m.
When the discharge pipe connects to a stack, except when it is the highest fixture and is within allowable length.
When a soil fixture is connected to a vented drain that is on a gradient of less than 1:60
When a soil fixture is connected to an inverted branch drain. (4 marks)
- (b) (i) When the stack receives discharge from three levels. (1 mark)
- (ii) 40 mm. (1 mark)
- (iii) Connect to the bottom of the discharge stack at no less than 300 mm below the lowest discharge pipe served.
Connect at an angle of 45°. (2 marks)
- (iv) To balance the air pressure in the stack, which prevents water trap seal loss.
To allow an increase in the number of discharge units. (2 marks)
- (c) (i) 1:80 or 1.25% (1 mark)
- (ii) Ensures that any condensation or liquids will drain back into the sanitary plumbing and drainage system.
Ensures that foul gases will travel upwards. (2 marks)

Total 13 marks

ANSWER 9

- (a) Any SIX (½ mark each):
Spouting and roof free from rust.
Spouting and roof free from flaking paint.
No trees overhanging roof or spouting.
TV aerial not located on roof near spouting (where bird droppings could get into spouting).
Location of chimneys/flues won't discharge soot into spouting.
No lead flashings or lead based paint on the roof.
No bitumen based roofing materials.
No friable asbestos roofing products.
No exposed treated timber that may leech into the rainwater.
No possible pollution. (3 marks)

- (b) Filter such as leaf guard or leaf diverter to prevent leaves etc entering downpipes.
First flush diverter to discharge the first amount of water during rainfall to waste.
Bird spikes. (2 marks)
- (c) (i) 112 – 119 kPa
(ii) 70 – 77 kPa (1 mark)
- (d) 32 mm (2 marks)
- Total 8 marks**

ANSWER 10

- (a) (i) A 75 mm
B 300 mm
C 50 mm
D 100 mm (4 marks)
- (ii) 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)
- (b) 500 mm (1 mark)
- Total 7 marks**

SECTION B

1. B A list of specified systems installed within a building and their inspection reports.
2. A An automatic back-flow preventer connected to the potable water supply.
3. B Every 12 months
4. D An Independently qualified person.
5. C In the middle third.
6. D 15 years.
7. E 50 years.
8. A To recover plant and equipment from the site.
9. C Health and Safety at Work Act.
10. C When the employee provides his/her own suitable PPE gear.
11. A 31 March.
12. A Lilac.
13. E The bypass must provide the same protection as the main.
14. E Independently Qualified Person (IQP).
15. B 9 litres per minute.
16. A 3 m/s.
17. B 100 mm.
18. D Every cylinder in the installation.

Total 18 marks