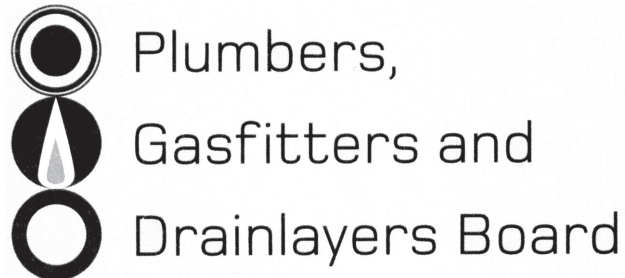


No. 9195



REGISTRATION EXAMINATION, NOVEMBER 2015
CERTIFYING PLUMBER

ANSWER SCHEDULE

ANSWER 1

Pipe section	Number of clips
A – B (20 mm)	11
B – C (20 mm)	12
C – D (15 mm)	3
C – E (15 mm)	14
B – F (20 mm)	8
F – G (15 mm)	15
F – H (15 mm)	13

		Vertical	Horizontal
Polybutylene (hot water supply)	15 – 18	1.0	0.6
	20 – 22	1.4	0.7

Total 7 marks

ANSWER 2

(a) Any FOUR (1 mark each)

Employees

Trainees/work experience people

Sub-contractors

Public

Volunteers

(4 marks)

(b) 1 mark each

What to do if an emergency arises (while the employee is doing work using plant or dealing with substance in that place)

All identified hazards to which the employee is or may be exposed while doing work (using plant or dealing with substances) and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to the employee

All identified hazards the employee will or may create while doing work (using plant or dealing with substances) and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to other people

Where all necessary safety clothing, devices, equipment, and materials are kept.

(4 marks)

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

(d) Any TWO (1 mark each)

Ensure that protective equipment is provided, accessible and used

Monitor employees' exposure to the hazard

Seek the consent of employees to monitor their health

(2 marks)

(e)

	Notifiable work Yes/No
Work on a two storey residential building that is 6 metres high	No
Lifting a 600 kg water tank into place with a block and tackle	Yes
Work in a trench that is 1.2 metres deep	No
Clipping pipework installed within a duct underground.	Yes
Removing a hot water cylinder that has been installed on a base that contains asbestos	Yes
Installing an emergency shower in an area where explosives are stored	No

(6 marks)

Total 17 marks

ANSWER 3

Stack vented through the roof

FWG is charged

Bath is vented

Each fixture discharges to stack or FWG correctly

Total 10 marks

ANSWER 4

Any fixtures discharging to ORG correct size

System vented in correct location(s) and size(s)

Any FWGs correctly charged

Underfloor pipework and branches sized correctly

All fixtures allowed for

No changes to drainage plan

Total 9 marks

ANSWER 5

- (a) Any TWO (1 mark each)
Use water delivered by truck
Use non potable water
Air test
Vacuum test (1 mark)
- (b) From G13
Procedures to match method (3 marks)
- Total 4 marks**

ANSWER 6

- (a) Drawing to show the following
- Pipe protected where it penetrates concrete, and pipe staked to prevent it being bent over or moved out of place.
Pipe sleeved or wrapped in a durable and flexible material (to allow for expansion and contraction) where it passes through the concrete.
 - Top of the pipe covered so that it is not filled with debris.
 - At least 25 mm clearance from the top of the pipe to the underside of the slab, and (2 marks)
- (b) 50 mm
- (c) Access for cleaning must be provided by a sealed floor level rodding point located downstream of the highest fixture connection to the branch drain (2 marks)
- (d) 50 years (1 mark)
- Total 6 marks**

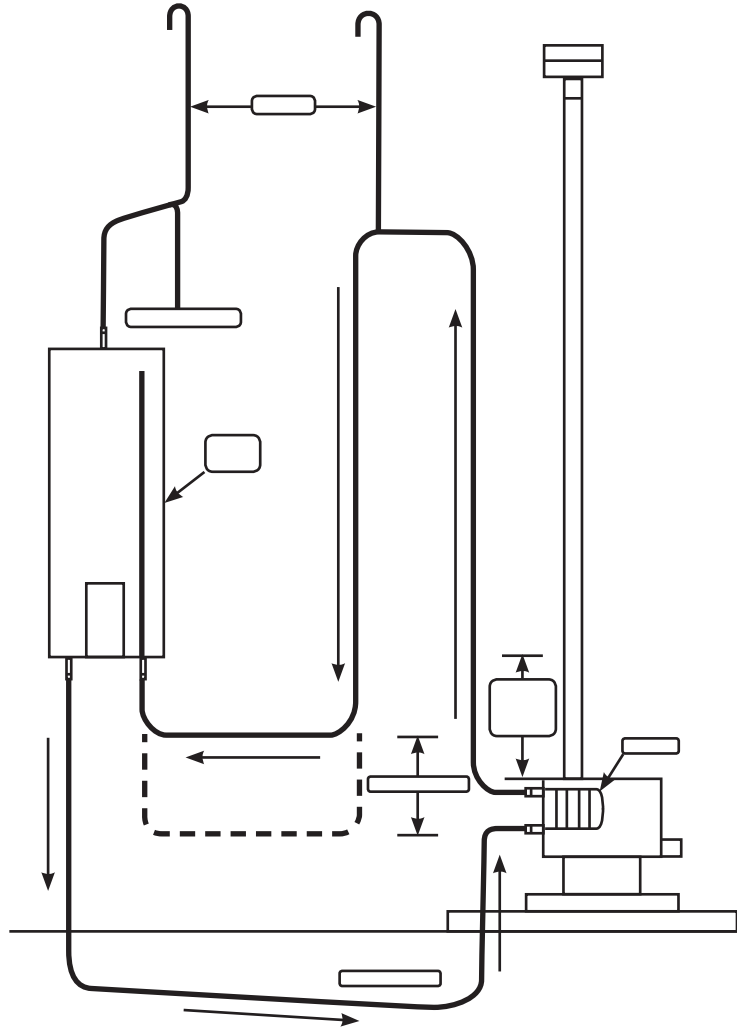
ANSWER 7

- (a) (i) Discharge rate: 378
Drain size: 80 mm (1 mark)
- (ii) Discharge rate: 1324.5
Drain size: 150 mm (1 mark)
- (b) It is not a fail-safe device (there is a possibility that both non-return valves will fail at the same time, and there is no relief port to discharge backflow if this should occur) (1 mark)
- (c) Back pressure of the returning water could hold the poppet up and seal off the atmospheric port, allowing water to continue to travel back up stream (1 mark)
- Total 2 marks**

ANSWER 8

- (a) (i) Advantage: Economical use of water – flushed manually by user
Disadvantage: Some users may not flush, leading to blocked discharge pipework
- (ii) Advantage: Flushes each time a person enters the room
Disadvantage: Possible failure of power supply, solenoid or sensor
- (iii) Advantage: Automatically flushes at regular intervals – not reliant on user or power
Disadvantage: Will continue to periodically flush when the urinal is not in use (overnight, weekends etc) (6 marks)
- (b) (i) 1 (1 mark)
- (ii) 65 mm (1 mark)
- (iii) 2.5 m (1 mark)
- Total 9 marks**

ANSWER 9



- The storage unit (1 mark)
- The wet back heat exchanger (1 mark)
- Pipework including grades (flow 1 mark, return 1 mark)
- The recommended heights between the storage cylinder and the wet-back (1 mark)
- Correct venting (½ mark each, 1 mark)
- Lagging requirements (1 mark)

If no valves or obstructions are installed in the piping (primary and return) between the heat source and the storage tank – zero marks

If not an over and under system – zero marks

Total 7 marks

ANSWER 10

(a) Any SIX (½ mark each)

Number of people in the home

Collector area

Collector

Thermostat setting

Environmental factors (climate)

Variable usage

Direction of the collector

Tilt of the collector

Shade

Distance from collector to storage unit

Weight of the unit

(3 marks)

(b) Any FIVE (1 mark each)

Debris on the glass

Trees grown taller in the area

Air lock valve functioning

Selective surface breaking down

Penetrations on roof/supporting structure – firm and water tight

Condition of insulation

Any leaks in collector or pipework connections

Temperature probe is positioned correctly in its socket and sealed

(5 marks)

Total 9 marks

ANSWER 11

- (a) To stop the spread of fire and smoke from one fire cell to another.
(Any TWO, 1 mark each) (2 marks)
- (b) In the event of a fire the fire collar expands, crushing the pipe and sealing the penetration.
(Any TWO, 1 mark each) (2 marks)
- (c) The fire collar must match the higher rating (the rating of the plant room). (1 mark)

Total 5 marks

ANSWER 12

- (a) Prior to initial use.
Whenever the tank is taken out of service for inspection, repairs, painting or other activity that might lead to contamination of water. (2 marks)
- (b) Chemical composition of the water.
The amount of organic material present. (2 marks)

Total 4 marks

SECTION B

1. E 350 litres
2. A To prevent the system from overheating
3. D Both check valves shut and relief valve shut
4. B 150 mm
5. C Once every year
6. D The building owner
7. A Lilac
8. B 300 mm
9. C 100 mm
10. B 200 litres

Total 10 marks