No. 9194

Plumbers,
Gasfitters and
Drainlayers Board

REGISTRATION EXAMINATION, NOVEMBER 2011

CERTIFYING COMMON

ANSWER SCHEDULE

ANSWER 1

Any FOUR (½ mark each):

- Pipe size.
- Pipe length.
- Roughness of pipe bore.
- Velocity of flow.
- Viscosity of the liquid.
- Temperature.
- Gradient.

Total 2 marks

ANSWER 2

(a)
- Cross at an angle of not less than 45°.
- Have a vertical separation of not less than 100 mm.
- Be marked along its length for 1 m either side of the centreline of the service with marker tape complying with AS/NZS 2648.1, laid 150 mm above the installed service.

(3 marks)

(b) Any THREE (1 mark each)

- Rusting in the presence of air and water.
- Attack by chemicals.
- Galvanic cell action
- Electrolysis, Stray electric current.
- Aggressive soil.

(3 marks)

(c) Any THREE (1 mark each)

- Coating (Plastic, Galvanized, Paint)
- Wrapping (Denzo, PVC tape)
- Sleeving
- Cathodic Protection (anode)
- Impressed current.

(3 marks)

Total 9 marks

ANSWER 3

10 × 1.5 × 0.800 = 12	(½ mark)
4.5 × 1.5 × 0.800 = 5.4	(½ mark)
2.7 × 1.5 × 0.800 = 3.24	(½ mark)
12 + 5.4 + 3.24 = 20.64	(½ mark)
3.142 × 0.3 × 0.3 × 17.2 = 4.86	(1 mark)
20.64 + 4.86 = 15.78	(½ mark)
20% of 15.78 = 3.156	(1 mark)
15.78 + 3.156 = 18.936 m^3	(½ mark)

Total 5 marks

ANSWER 4

(a)
- Means are provided to prevent the employee from falling.
- Any means so provided are suitable for the purpose for which they are to be used.

(1 mark each, 2 marks)

(b)
- Consists of materials that are suitable for the purpose for which they are to be used, of sound quality, and adequate in strength for the particular use.
- Has bracings, jacks, and struts that are securely held to prevent accidental displacement, and packings and wedges that are held by nails or spikes.
- Is placed in a proper manner by an experienced person under competent supervision.
- Is not altered, dismantled, or interfered with except on the instructions of the employer or a representative of the employer.

(1 mark each, 4 marks)

(c)
- Any such excavation is covered or fenced, when no employee is in the immediate vicinity to prevent access to it by any person.
- Any such excavation created in the course of the work is covered, fenced, or filled at the completion of the work.

(1 mark each, 2 marks)

(d) (i) Any SIX (½ mark each)

- The erection or dismantling of scaffolding from which any person may fall 5 metres or more.
- Work using a lifting appliance where the appliance has to lift a mass of 500 kilograms or more a vertical distance of 5 metres or more, other than work using an excavator, a fork-lift, or a self-propelled mobile crane.
- Work in any pit, shaft, trench, or other excavation in which any person is required to work in a space more than 1.5 metres deep and having a depth greater than the horizontal width at the top.
- Work in any drive, excavation, or heading in which any person is required to work with a ground cover overhead.
- Work in any excavation in which any face has a vertical height of more than 5 metres and an average slope steeper than a ratio of 1 horizontal to 2 vertical.
- Work in which any explosive is used or in which any explosive is kept on the site for the purpose of being used.
- Work in which any person breathes air that is or has been compressed or a respiratory medium other than air.

(3 marks)

(ii) Any FOUR (1 mark each)

- Work in connection with a residential building up to and including 2 full storeys.
- Work on overhead telecommunications lines and overhead electric power lines.
- Work carried out from a ladder only.
- Maintenance and repair work of a minor or routine nature.
- Emergency situations.

(4 marks)

Total 15 marks

ANSWER 5

Pipe Lengths	Quantity	Fittings	Quantity
150 mm × 5 m	21.5 m (½) or 5 (1 mark)	200 mm Tee Junction	3 (1 mark)
200 mm × 5 m	7 m (½) or 2 (1 mark)	250 mm Tee Junction	3 (1 mark)
250 mm × 5 m	6 m (½) or 2 (1 mark)	300 mm Tee Junction	1 (1 mark)
300 mm × 5 m	2 m (½) or 1 (1 mark)	300 × 250 reducer	2 (1 mark)
		250 × 200 reducer	5 (1 mark)
Jointing Primer	2 (1 mark)	200 × 150 reducer	8 (1 mark)
Jointing Solvent	3 (1 mark)	150 mm Bend	8 (1 mark)
		200 mm Bend	1 (1 mark)

Total 14 marks

ANSWER 6

= 25 × 0.000081 × (36 - 9)
= 25 × 0.000081 × 27 (1 mark)
= 0.03467 m (1 mark)
= 54.67 mm (1 mark)

Total 3 marks

ANSWER 7

(a) Calculations or test (for example, the calculations necessary to show a building design complies with the structural requirements of the Building Code). A performance based standard or code does not prescribe how work should be done, but states how completed work and its parts must perform.

(2 marks)

(b) A custom designed method that differs completely or partially from those described in the Compliance Documents, but will fulfil the requirements of the code.

(2 marks)

(c) Acceptable solution – a pre-approved method of compliance i.e. included in the building code, Compliance Documents.

(2 marks)

(d) Provide one means of complying with the clauses of the Building Code.

Buildings built to the method (Acceptable Solution or Verification Method) described in a Compliance Document are automatically deemed to comply with the Code.

Designs based on them must be accepted by building consent authorities as demonstrating compliance with the Building Code.

(2 marks)

Total 8 marks

ANSWER 8

(a) Drawing shows concrete slab and pipe penetration.
Pipe must be sealed to the barrier using waterproof tape which must be wound round the pipe from above the slab level down to and sealed to the vapour barrier.

Total 3 marks

ANSWER 9

Name of A	Sheeting (½ mark)
Minimum dimensions of A	200 × 50 mm (½ mark)
Minimum Horizontal Spacing of A	Close (½ mark)
Name of B	Struts (½ mark)
Minimum dimensions of B	200 × 150 mm (½ mark)
Name of C	Props (½ mark)
Name of D	Walings (½ mark)
Minimum dimensions of D	250 × 150 mm (½ mark)
Measurement E	1200 mm (½ mark)
Measurement F	1800 mm (½ mark)

Total 5 marks

ANSWER 10

(a) (i) 300 mm
(ii) 900 mm (2 marks)

(b) Any SIX (1 mark each)
- The effect excavation may have on adjoining occupiers, adjacent structures.
- Effected footpath and roading.
- The measures for controlling traffic and pedestrians and the safety of persons in the vicinity.
- Underground services such as electricity, gas or water reticulation.
- The nature of the soil to be excavated and its method of disposal.
- The length and nature of the haul route.
- The water table level, presence of standing or running water, possibility of flooding by surface runoff, and suitable means of disposing of discharged water.

(6 marks)

Total 8 marks

ANSWER 11

Any SIX:

- The date and time of the test.
- The period of time the test was applied for.
- The method of testing e.g. Standard.
- The test pressure.
- Who did the test.
- The results of the test, e.g. whether sound or not.
- The extent of the installation tested and materials.

Total 6 marks

ANSWER 12

- To protect the health and safety of members of the public by ensuring the competency of persons engaged in the provision of sanitary plumbing, gasfitting, and drainlaying services; and

- To regulate persons who carry out sanitary plumbing, gasfitting, and drainlaying.

Total 2 marks

SECTION B

1. C Advanced scaffolding.
2. B The usual employer.
3. D The contractor.
4. A Serious harm.
5. E 1 Vertical : 1.5 Horizontal.
6. A $\pi \times r^2 \times l$
7. B $10,000.00.
8. D 7 days.
9. E The employer.
10. C 24 hours before work commences.
11. A The notification is received by the board.
12. B 12 months.
13. C 24 months.
14. C 1.0 m.
15. E 2.6 m.
16. D 2.0 m.
17. A 1 in 4.
18. E Hydrogen Sulphide.
19. D Acts.
20. A Regulations.

Total 20 marks