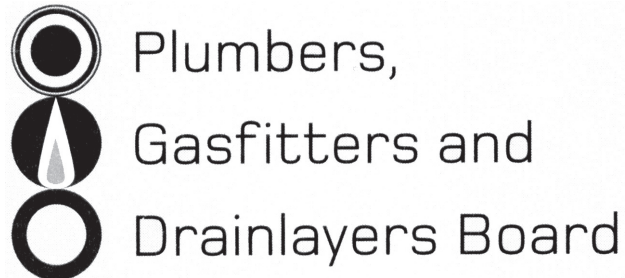


No. 9196



REGISTRATION EXAMINATION, NOVEMBER 2017
CERTIFYING GASFITTER

ANSWER SCHEDULE

ANSWER 1

Pipe Section	Length (m)	Main Run (m)	Gas Flow MJ/h	Nominal Size
A - B	4.5	16 (½ mark)	401 (½ mark)	25 (1 mark)
B – C	2.3		120 (½ mark)	20 (1 mark)
B – D	3.7		281 (½ mark)	25 (1 mark)
D – E	4.4		23 (½ mark)	10 (1 mark)
D – F	2.2		258 (½ mark)	20 (1 mark)
F – G	4.5		220 (½ mark)	20 (1 mark)
F – H	5.6		38 (½ mark)	10 (1 mark)

Total 11 Marks

ANSWER 2

- (a) (i) Meaning: A pre-approved method of compliance with the Building Code. (1 mark)
Example: NZ5601 Part 1. (1 mark)
- (ii) Meaning: A custom designed method that differs completely or partially from those described in the compliance documents, but that will comply with the Building Code of the code. (1 mark)
Example: Any independent standard against which compliance with the Building Code could be established. (1 mark)
- (iii) Meaning: Publications that provide means of compliance. (1 mark)
Example: NZ5601 Part 1, Building Code clauses. (1 mark)
- (iv) Meaning: Standards or parts of standards which have been pre-approved as acceptable solutions or verification methods. (1 mark)
Example: NZ5601 Part 1. (1 mark)
- (b) Calculations or test to show a building design complies with the Building Code. (1 mark)

Total 9 Marks

ANSWER 3

- (a) (i) Name: Certificate of Compliance
When issued: When a new installation or part of an installation has been completed. (2 marks)
- (ii) Name: Gas Safety Certificate
When issued: After work has been completed and connected. (2 marks)
- (iii) Name: Certificate of Verification
When issued: When an existing gas installation has been checked for safe supply of gas. (2 marks)
- (b) • High Risk (1 mark)
- (c) • Energy Safety (1 mark)

Total 8 Marks

ANSWER 4

- (a) Flue drawn with manifold (1 mark)
Minimum length of section 'X' = 1700 mm (2 marks)
The minimum diameters of each section of the flue = 100 mm, 125 mm and 125 mm (3 marks)
The minimum rise of the lateral flue connector = 20 mm per metre (= 43 mm) (1 mark)
- (b) • Reduces the motive force of the flue products.
• Causes condensation. (2 marks)
- (c) Any TWO (1 mark each)
- Single or double skin / flue material.
 - Location/position of the flue.
 - Termination point.
 - Length of flue.
 - Elbows or bends. (2 marks)
- (d) Any FOUR (½ mark each)
- The heat output of the appliance.
 - The spigot size
 - Lateral run.
 - Number of elbows and bends.
 - Total length of the flue. (½ mark each, 2 marks)

Total 13 Marks

ANSWER 5

- (a) Any TWO (½ mark each)
- Fire cells.
 - Mastics.
 - Dry riser.
 - Fire rated wall. (1 mark)
- (b) Drawing to:
- be cross-sectional
 - show wall and pipe
 - show collars both sides
 - show collars fixed to wall. (4 marks)
- (c) • Swells when exposed to heat. (1 mark)

Total 7 marks

ANSWER 6

- (a) Any TWO (½ mark each)
- Excessive condensation.
 - Build-up of products of combustion or other toxic conditions.
 - Accumulation of LPG from leakage. (1 mark)
- (b) $6 \times 2 \times 3.6 = 43.2$ (1 mark)
 $(610 \times 43.2) = 26,352$ (1 mark)
 $(650 \times 5) = 3,250$ (1 mark)
 $26,352 + 3,250 = 29,602 \text{ mm}^2$ (1 mark) (4 marks)
- (c) Any TWO (½ mark each)
- Wind-actuated self-trimming cowls.
 - Rotary exhauster heads.
 - Interlocked, fan assisted ventilation. (1 mark)

Total 6 Marks

ANSWER 7

- (a) • $1095 \div 185 = 5.9$ so 6 (2 marks)
- (b) • 6 (1 mark)
- (c) • More than 100 kg of LPG is on site for more than 18 hours (2 marks)

Total 5 Marks

ANSWER 8

- (a) Correction factor = $\frac{(101.3 + 14)}{101.3} = 1.138$ (1 mark)
 $4.7 \times 1.138 = 5.34$ (1 mark)
 $5.34 \times 95 = 507.3$ MJ (2 marks)
- (b) • Gas inlet pressure.
• Maximum gas flow rate.
• Pipe size. (3 marks)
- (c) Any TWO (1 mark each)
- Rotary meter will operate at high pressures.
 - Rotary meter has greater capacity for size.
 - Rotary meter produces steady/smooth output. (2 marks)

Total 9 Marks

ANSWER 9

Any TWO (2 marks each)

- Harness: Stops a person striking the ground once fallen.
- Fall restraint system: Stops a person from falling.
- Edge protection system. Prevents a person falling off a ledge.
- Air bags. Minimises damage when a person falls.
- Nets/mesh. Minimises damage when a person falls.

Total 4 Marks

ANSWER 10

(a) Any ONE (1 mark each)

- Worker required to breathe air or gas that has been compressed or under pressure.
- Where the confined space is a tunnel or drive underground.
- If explosives are being used or stored.

(1 mark)

(b) Any FOUR (1 mark each)

- Two-way radio.
- Tripod and harness.
- Length of rope.
- Phone for contacting emergency services.
- Gas monitoring equipment.
- Timer.
- Record of entry and exit.

(4 marks)

Total 5 Marks

ANSWER 11

(a) Any four (1 mark each)

- A substance escaping.
- Gas or steam escaping.
- An implosion, explosion or fire.
- The collapse of a structure.
- The collapse or failure of an excavation.
- Electric shock.
- The fall or release from height of anything.
- Other incidents outlined in other regulations.

(4 marks)

- (b)
- Preserve the site.
 - Notify WorkSafe.
 - Keep records.

(3 marks)

- (c)
- Notifiable illness or injury.
 - Death.

(2 marks)

Total 9 Marks

ANSWER 12

Any FOUR (1 mark each)

- Trainees.
- People with exemptions under supervision.
- Provisional licence holders.
- Tradesman plumbers, gasfitters, drainlayers.
- Journeymen.

Total 4 Marks

SECTION B

1. E Over temperature situations will allow the device to interrupt the flame failure circuit shutting off the gas supply.
2. B 6 months.
3. C E2
4. D 10 kPa.
5. E The erection or dismantling of scaffolds from which a person could fall 3 m or more.
6. A WorkSafe.
7. C 10 m²
8. C 10 m
9. C 1.5 kPa
10. D 150 mm

Total 10 Marks