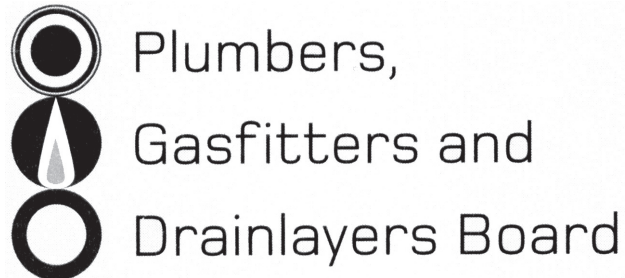


No. 9196



REGISTRATION EXAMINATION, JUNE 2022
CERTIFYING GASFITTER

ANSWER SCHEDULE

ANSWER 1

- (a) (i) Any TWO (1 mark each)
- The chimney is not adequately sealed.
 - Debris from the chimney has fallen into the heater blocking the flue spigot.
 - The chimney has down draught.
- (2 marks)
- (ii) Any TWO (1 mark each)
- Seal the chimney.
 - Remove all loose debris from the inside of the chimney.
 - Install a flexible liner through the chimney.
- (2 marks)
- (b)
- Reduces the motive force of the flue products.
 - Causes condensation.
- (2 marks)
- (c)
- Close the appropriate doors and windows.
 - Open doors to areas where appliances are.
 - Turn the extractor fan on.
 - Start the gas appliance, let it warm up.
 - Check for spillage using a smoke match or incense.
- (5 marks)

Total 11 Marks

ANSWER 2

Pipe section	Length (m)	Main run (m)	Gas flow (MJ/h)	Nominal size (mm)
A – B	5.2	20.7 (½ mark)	700 (½ mark)	32 (1 mark)
B – C	4.3		440 (½ mark)	32 (1 mark)
B – D	2.7		260 (½ mark)	25 (1 mark)
D – E	4.4		60 (½ mark)	15 (1 mark)
D – F	6.2		200 (½ mark)	20 (1 mark)
F – G	4.5		160 (½ mark)	20 (1 mark)
F – H	6.6		40 (½ mark)	15 (1 mark)

Total 11 Marks

ANSWER 3

- (a) (i) • Group controls protect multiple people from falling. Personal controls only look after individuals. (1 mark)
- (ii) Any TWO (1 mark each)
- Edge protection.
 - Scaffold.
 - * Elevating work platforms. (2 marks)
- (iii) • Fall restraint harness (2 marks)
- Fall arrest.
- (b) • Observance of a relevant code of practice may be considered as evidence of good practice in a court. (1 mark)

Total 6 Marks

ANSWER 4

- (a) • $500 \times 0.3 = 150$
- $100 \times 0.5 = 50$
 - $150 + 50 = 200$ litres/s
 - $200 \times 3600 = 720,000$ litres/h
 - $720,000 \div 1000 = 720$ m³/h (5 marks)
- (b) • $500 + 50 + 50 = 600$ MJ
- $600 \times 150 = 90,000$ mm² (2 marks)
- (c) • 720 (or answer from a) $\div 4 = 180$ m³/h
OR
 720 (or answer from a) $\div 3 = 240$ m³/h (1 mark)

Total 8 Marks

ANSWER 5

- (a) • A suitably qualified person who performs the physical supervision on behalf of the certifier. (2 marks)
- (b) • Tradesman.
• Journeyman. (2 marks)

Total 4 Marks

ANSWER 6

- (a) When the roof penetration has diameter 85 mm or greater. (1 mark)
- (b) When the roof penetration has diameter more than 200 mm. (1 mark)
- (c) (i) • 130 mm (3 marks)
- (ii) • 250 mm (1 mark)

Total 6 Marks

ANSWER 7

- (a) • $6 \text{ m} \times 1.14 = 6.84$
• $2 \text{ m} \times 0.79 = 1.58$
• $7.7 \text{ m} \times 0.50 = 3.85$
• $6.84 + 1.58 + 3.85 = 12.27$ (4 marks)
- (b) • 0.35 kPa (1 mark)

Total 5 Marks

ANSWER 8

- (a) • To stop the spread of fire and smoke from one fire cell to another. (2 marks)
- (b) • In the event of a fire the fire collar expands crushing the pipe sealing the penetration. (2 marks)
- (c) Any TWO (1 mark)
- Fire collars.
 - Fire walls.
 - Fire doors.
 - Intumescent material.
 - Other forms of fire-rated sealant etc. (2 marks)

Total 6 Marks

ANSWER 9

- (a) • 24 hours (1 mark)
- (b) Any FIVE (1 mark each)
- Nature of work.
 - Address of worksite.
 - Contractor details.
 - Brief description of work.
 - Due date of commencement.
 - Estimated time to complete.

(5 marks)

Total 6 Marks

ANSWER 10

- (a) • High Risk
• Low Risk
• General (1 mark)
- (b) • WorkSafe (1 mark)
- (c) Certificate 1: GSC Gas Safety Certificate
Situation: After work has been completed and connected.
- Certificate 2: CoC Certificate of Compliance
Situation: When a new installation has been completed.
- Certificate 2: CoV Certificate of Verification
Situation: When an existing gas installation has been checked for safety.

(3 marks)

- (d) • High risk data base (1 mark)
- (e) (i) • Supplier Declaration database (1 mark)
- (ii) • Approved Practitioner (1 mark)

Total 8 Marks

ANSWER 11

- (a) Six (1 mark)
- (b) • Where the lowest burner is over 200mm above the mounting surface and,
• a heat shield below the burner is incorporated in the design of the appliance. (2 marks)
- (c) (i) 1350 mm (1 mark)
- (ii) 600 mm (top of pan) (1 mark)

Total 5 Marks

ANSWER 12

Maximum outlet operating pressure LPG	3.5 kPa
Maximum outlet operating pressure natural gas	1.5 kPa

Total 2 Marks

ANSWER 13

Any SIX (½ mark each)

- Heat loss from material or position.
- Shape of flue, location of appliances.
- Input rating of appliances.
- The number of appliances.
- Length of flue, allowing for lateral runs.
- Termination point.
- Position – heat loss.
- Size of spigots on appliances.
- Any recommendations of appliance manufacturer.

Total 3 Marks

ANSWER 14

- (a) (i) • Must be vented at the rear to outside. (1 mark)
• Must be in a sealed recess. (1 mark)

(ii) 32,500 mm² (1 mark)

- (b) (i) • 32,000 BTU = 33.76 MJ/h (1 mark)
• $33.76 \times 610 = 20,593.6$ (1 mark)
• $650 \times 3 = 1950$ (1 mark)
• $20,593.6 + 1,950 = 22,543.6 \text{ mm}^2$ (1 mark)
- (4 marks)

(ii) • $22,543.6 \div 2 = 11,271.8 \text{ mm}^2$
• $11,271.8 \div 300 = 37.6 \text{ mm}$ (2 marks)

Total 9 Marks

SECTION B

1. C 3 kPa.
2. B 1.2 m
3. D 2.0 kPa.
4. B 80% of the length of the flexible hose.
5. A B2.
6. D NZS 5255.
7. D QCC.
8. B 25 mm.
9. D 14 kPa.
10. A 15 litres/second.

Total 10 Marks