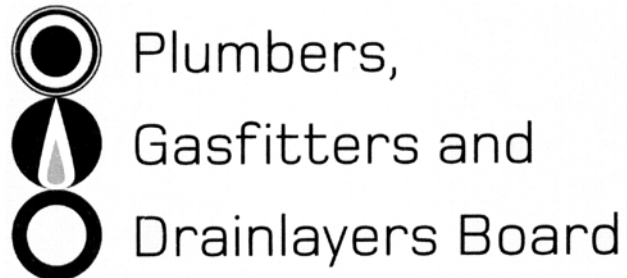


No. 9196



REGISTRATION EXAMINATION, NOVEMBER 2021
CERTIFYING GASFITTER

ANSWER SCHEDULE

ANSWER 1

(a) Must be onsite with supervisee and be able to see or hear the supervisee at all times. (2 marks)

(b)

Authorisation type	Minimum length of time of direct supervision
Trainee	12 months
Exemption under supervision	24 months

(4 marks)

- (c)
- Certifying.
 - Tradesman.

(2 marks)

Total 8 Marks

ANSWER 2

- (a)
- $6 \times 2 \times 3.6 = 43.2 \text{ MJ}$ (1 mark)
 - $(610 \times 43.2) = 26,352$ (1 mark)
 - $(650 \times 8) = 5,200$ (1 mark)
 - $26,352 + 5,200 = 31,552 \text{ mm}^2$ (1 mark)

(4 marks)

(b) Any FOUR (1 mark each)

- The cylinder compartment must be separated from the storage area with a divider.
- The divider must be sealed to the sides and floor of the compartment.
- The cylinder portion must be vented at the base.
- The storage compartment must not contain batteries or electrical equipment.
- Must have a drain.
- Must be labelled.

(4 marks)

Total 8 Marks

ANSWER 3

(a) Any SIX (1 mark each)

- That the installation is safe to use.
- What parts of the installation it applies to.
- The location of the installation.
- The authentication mark.
- The date the installation was connected to the gas.
- The name and registration number of the person who connected it.
- Signature of gasfitter and date gas was connected.
- A statement that the work complies with the Building Code.

(6 marks)

- (b)
- Generate a CoC.
 - Enter the work onto the High-Risk data base.

(2 marks)

- (c)
- Certificate of Verification.
 - When an existing gas installation has been checked for safety.

(2 marks)

(d)

Situation	Risk Category
Servicing a gas fridge in a motorhome.	High
Relocating the ventilation openings in a caravan.	High
Replacing a gas hob by another one of the same model in a caravan.	High
Adding a gas hob to an existing installation in a house.	High
Replacing a gas valve on a gas hob in a house.	Low
Installing a gas hob installation in a new motorhome.	High

(½ mark each, 3 marks)

Total 13 Marks

ANSWER 4

- (a) (i) • A pre-approved method of compliance with the Building Code.
• Suitable example given. (2 marks)
- (ii) • 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. May need approval by the building consent authority.
• Suitable example given. (2 marks)
- (iii) • Calculations or test to show a building design complies with the Building Code. Approved by the building consent authority.
• Suitable example given. (2 marks)
- (b) (i) Best practice guides recognised as providing suitable ways of performing particular tasks with the least amount of potential risk. (1 mark)
- (ii) Suitable Codes of Practice given. (2 marks)

Total 9 Marks

ANSWER 5

- (a) (i) $\pi \times 0.0325^2 \times 7.5 = 0.02489 \text{ m}^3$
 $\pi \times 0.016^2 \times 0.5 = 0.00040 \text{ m}^3 \times$
 $\pi 0.02^2 \times 3.5 = 0.00140 \text{ m}^3$
Total = $0.02969 \text{ m}^3 = 29.69 \text{ litres}$ (4 marks)
- (ii) • 0.10 kPa. (1 mark)
- (b) • 15 mins. (2 marks)
- (c) • Purge to outside atmosphere.
• Purge outlet should be at least 6 m from an ignition and well clear of any opening into a building.
• Reason – because the volume of gas is large, there is a higher risk of explosion. (3 marks)

Total 10 Marks

ANSWER 6

Pipe Section	Length (m)	Main run (m)	Gas flow (MJ/h)	Nominal size (mm)
A - B	1.5	9.9 (½ mark)	387.63 (½ mark)	25 (1 mark)
B – C	6		69.63 (½ mark)	15 (1 mark)
B – D	2.5		318 (½ mark)	20 (1 mark)
D – E	3		188 (½ mark)	20 (1 mark)
D – F	2.4		130 (½ mark)	20 (1 mark)
F – G	3.5		35 (½ mark)	10 (1 mark)
F – H	3.2		95 (½ mark)	15 (1 mark)

Total 11 Marks

ANSWER 7

(a)

	Situation A: Lateral length 0.6 m	Situation B: Lateral length 1.5 m
Minimum flue diameter	125 mm	125 mm

(b)

	Situation A: Lateral length 1.5 m	Situation B: Lateral length 0.6 m
Minimum flue diameter	125 mm	100 mm

Total 4 Marks

ANSWER 8

- (a)
- $101.3 + 15 = 116.3$ (1 mark)
 - $116.3 \div 101.3 = 1.148$ (1 mark)
 - $17.25 \times 1.148 = 19.80$ (1 mark)
 - $19.80 \times 40 = 792.12 \text{ MJ}$ (1 mark) (4 marks)
- (b)
- $792.12 \times 85\% = 673.30 \text{ MJ}$ (1 mark)
- (c)
- $17.25 \times 10 = 172.5 \text{ m}^3/\text{h}$ (of air) (1 mark)
 - $172.5 \times 20\% = 34.50 \text{ m}^3$ (1 mark)

(2 marks)

Total 7 Marks

ANSWER 9

- (a)
- With components belonging to the same system.
 - Parts permitted with the written approval of the manufacturer. (2 marks)
- (b)
- A manufacturer's label is to be attached adjacent to the meter or LPG cylinders.

(2 marks)

Total 4 Marks

ANSWER 10

- (a) A • 450 mm
B • 300 mm
C • 100 mm (3 marks)
- (b) (i) • Cross at an angle of not less than 45°. (2 marks)
• Have a vertical separation of not less than 100 mm.
- (ii) • 500 mm. (1 mark)

Total 6 Marks

ANSWER 11

- (a) Any SIX (½ mark each)
- Roofing material.
 - Cladding material.
 - Pipe lagging.
 - Heat resistant linings.
 - Vinyl flooring.
 - Flues.
 - Insulation. (3 marks)
- (b) Any TWO (1 mark each)
- Dust of various types.
 - Fumes from solvents and glues etc.
 - Sealants, lead and chemicals.
 - Excessive continuous noise.
 - UV exposure. (2 marks)

Total 5 Marks

ANSWER 12

- Close the appropriate doors and windows.
- Turn the range hood on.
- Start the gas appliance, let it run for 10 minutes.
- Hold a smoke match near the down draught diverter of the appliance and check for spillage.
- If spilling, open a window slowly until the appliance is no longer spilling.
- Measure the opening to work out the required vent size.

Total 5 Marks

SECTION B

1. C 2 m.
2. C 10 m².
3. B 15 litres/second.
4. B 7 kPa.
5. A 0.3 m³.
6. A 7 kPa.
7. E When the size of the roof penetration is greater than 85 mm diameter.
8. C 0.4 MJ/h/m³.
9. A 10 m³.
10. C 1.5 kPa.

Total 10 Marks