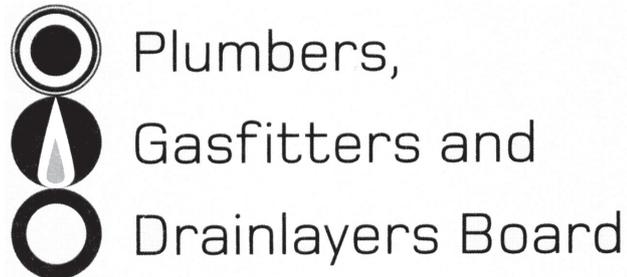


No. 9196



REGISTRATION EXAMINATION, NOVEMBER 2015
CERTIFYING GASFITTER

ANSWER SCHEDULE

ANSWER 1

Appliance	Daily Operating Time	Daily m ³ consumption
LPG, package burner 280 MJ/h	12 hours	37.3 (1 mark)
LPG space heater 38000 BTU/h	6 hours	2.67 (2 marks)
Natural gas furnace 38 kW/h	7 hours	23.94 (2 marks)
Natural gas, Deep fryer 80 MJ/h	4 hours	8 (1 mark)

Total 6 Marks

ANSWER 2

- (a)
- Soot in and around the entrance to the combustion chamber.
 - The thermal fuse has been activated.
 - Heat damage to the valve assembly above the combustion chamber entrance.
- (3 marks)
- (b)
- Flames or heat spilling out the front of the burner chamber.
 - Wafting, lazy, vitiated flame not receiving secondary air supply.
- (2 marks)
- Total 5 Marks**

ANSWER 3

Any FIVE (1 mark each)

- Insulation around the heater.
- Insulation of hot water pipework.
- Location of appliance relative to hot water usage.
- Capacity of heater compared with water demand.
- Pattern of hot water usage.
- Maintenance and servicing of appliance.
- Insufficient gas supply.
- Length of the flue.

Total 5 Marks

ANSWER 4

(a) (i)		Situation A: Lateral length 0.5 m	Situation B: Lateral length 0.8 m
	Minimum flue diameter	100mm	125mm

(ii)		Situation A: Lateral length 0.5 m	Situation B: Lateral length 0.8 m
	Minimum flue diameter	125mm	125mm

(4 marks)

(b) (i) Incinerator (1 mark)

- (ii)
- Outside the limits of Table H1.
 - The diameter of the common flue is more than seven times the size of the flue connector.
 - If the flue connector has more than two 90° changes of direction. (3 marks)

(iii) When only one appliance is in use, particularly if the gas consumption is low. (2 marks)

Total 10 Marks

ANSWER 5

(a)	Installation pressure drop/m	26.5 mm (1 mark)
	Length of longest run	29 mm (1 mark)

Pipe Section	MJ	Section Length	Diameter
A – B	335	7.5 m – 8 m	25 mm, 32 mm
B – C	90	1 m	20 mm
B – D	245	4 m – 5 m	25 mm
D – E	160	5 m – 5.5 m	20 mm, 25 mm
D – F	85	7 m – 7.5 m	20 mm
F – G	40	7.5 m – 8 m	15 mm
F – H	45	8 m – 8.5 m	15 mm

(½ mark each)

(½ mark each)

(1 mark each)

(16 marks)

(b) 15 mm

(3 marks)

Total 19 marks

ANSWER 6

- (a)
- Check the ventilation for the appliance.
 - Check the distances from the burners to combustible surfaces.
 - Check the appliance is level.
 - Check the restraining device.
 - Check the hose for wear.
 - Check the operation of the thermostat and by-pass. (½ mark each, 3 marks)
- (b)
- Close the appropriate doors and windows.
 - Turn the range hood on.
 - Start the gas appliance, let it run for 10 minutes.
 - Open a window slowly until the appliance is no longer spilling.
 - Measure the opening to work out the required vent size. (5 marks)

Total 8 Marks

ANSWER 7

- (a) (i) 200 mm. (1 mark)
- (ii) From the edge of the burner. (1 mark)
- (b)
- 5 mm thick ceramic tiles.
 - 5 mm toughened safety glass.
 - 0.4 mm sheet metal over 6 mm fibre cement board. (3 marks)
- (c) 150 mm. (1 mark)

Total 6 Marks

ANSWER 8

- $(610 \times 5.4) = 3294$ (1 mark)
- $(650 \times 1) = 650$ (1 mark)
- $3294 + 650 = 3944 \text{ mm}^2$ (1 mark)
- $3944 < 4000$ so answer is 4000 mm^2 (1 mark)

Total 4 Marks

ANSWER 9

- (a) Any FOUR (½ mark each)
- Outlet of gas regulators in gas pipework.
 - Inlet and outlet of pressure raising devices.
 - Outlet of the venting device on a double block and vent safety shut off system.
 - Inlet of a gas appliance.
 - Where a permanent pressure gauge is fitted. (2 marks)
- (b) Test points must be self-sealing type. (1 mark)
- Total 3 Marks**

ANSWER 10

- (a) Any FOUR (½ mark)
- Emergency procedures.
 - Accident register.
 - Hazard register.
 - Accident report forms.
 - Hazard management procedures. (2 marks)
- (b)
- Make sure anyone injured or suspected of injury has received medical attention if necessary.
 - Ensure the accident scene is not interfered with, without permission of a Health and Safety Inspector.
 - Advise the local WorkSafe New Zealand office as soon as possible by phone, fax or email.
 - Complete an investigation and take steps to eliminate, isolate or minimise any identified significant hazard.
 - Email, post or fax a written notice to the nearest WorkSafe New Zealand office within 7 days. (5 marks)
- (c)
- An Improvement Notice.
 - A Prohibition Notice.
 - An Infringement Notice. (3 marks)
- (d) 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 16 Marks**

ANSWER 11

- (a) • The owner or occupier of the property where the danger exists.
• WorkSafe New Zealand. (2 marks)
- (b) • Details of the nature of the danger.
• How and why the gas installation or gas appliance presents an immediate danger to life or property.
• Any steps that have been taken, or that the person believes must be taken, to minimise or eliminate the danger. (2 marks)
- (c) Advise the owner or occupier to inform the gas retailer or gas wholesaler of the danger. (1 mark)
- (d) The manufacturer's instructions must be such that, if the gas appliance or fitting to which they apply is installed, tested, maintained, or connected in accordance with those instructions, the resulting appliance or fitting will
• comply with these regulations
• be safe. (2 marks)
- (e) (i) That a supplier declaration relating to the appliance has been published on the Internet site. (1 mark)
- (ii) On the supplier declaration database (Energy Safety). (1 mark)

Total 9 Marks

SECTION B

1. D 20
2. D 164 MJ/h
3. B 6 months
4. D \$10,000
5. D 150 mm
6. B Working in an area classed as a confined space
7. B 12%
8. E 200 mm
9. E 14.0 kPa

Total 9 Marks