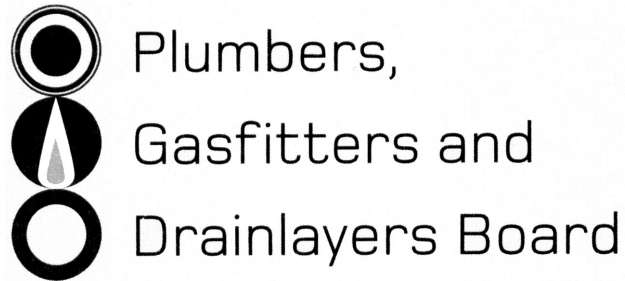


No. 9196



REGISTRATION EXAMINATION, JUNE 2012  
**CERTIFYING GASFITTER**

**ANSWER SCHEDULE**

## ANSWER 1

- (a) (½ mark each)  
 The operating pressure shall not exceed 7 kPa.  
 Only copper pipe conforming with table 2 shall be used.  
 Joints shall be kept to a minimum.  
 All joints shall be welded or brazed. (2 marks)
- (b) (½ mark each)  
 Quarter turn manual shut off ball type.  
 Solenoid de-energize to close type. (1 mark)
- (c) (½ mark each)  
 Located in a safe, accessible position remote from the equipment.  
 Clearly identified by the means of an appropriate sign.  
 Readily operable in an emergency.  
 Located outside the plant room or boiler house if the equipment is located in one. (2 marks)

**Total 5 Marks**

## ANSWER 2

- (a)
- | Size  | Quantity | Size  | Quantity |
|-------|----------|-------|----------|
| 50 mm | 16       | 25 mm | 4        |
| 40 mm | 2        | 20 mm | 5        |
- (4 marks)
- (b) 4 vents  
Two at 108,000 mm<sup>2</sup>      plant/storeroom wall,      High, Low  
Two at 63,000 mm<sup>2</sup>      storeroom/outside wall,      High, Low (6 marks)
- (c) (½ mark each)  
 Outlet of a pressure control device.  
 Gas appliances.  
 Inlet and outlet of pressure raising devices.  
 Outlet of the venting device of a double block and vent safety shut off system.

(2 marks)

**Total 12 Marks**

### ANSWER 3

Appliance	Daily Operating Time	Daily m <sup>3</sup> consumption
Natural gas, package burner 350 MJ/h	8 hours	70
LPG, Cooker 140 MJ/h	3 hours	4.66
Natural gas, furnace 120 MJ/h	5 hours	15
LPG, Space heater 35 MJ/h	4 hours	1.55

**Total 4 Marks**

### ANSWER 4

(a) Any FOUR (1 mark each)

Dust and lint present.

Flammable vapours present.

Appliance is installed in a confined space.

Ventilation or fans interfering with the combustion air.

Manufacturer's requirement.

(4 marks)

(b) Any THREE (1 mark each)

Incorrectly set bi-pass volume.

Faulty thermocouple.

Thermocouple incorrectly located.

Blockage in burner ports.

Incorrect flame picture on burner.

(3 marks)

**Total 7 Marks**

### ANSWER 5

Section	MJ	Pipe Size	Section	MJ	Pipe Size
A-B	288 (½ mark)	40 mm (1 mark)	B-C	72 (½ mark)	25 mm (1 mark)
B-H	216 (½ mark)	32 - 40 (1 mark)	C-G	24 (½ mark)	20 mm (1 mark)
H-L	72 (½ mark)	25 mm (1 mark)	C-D	48 (½ mark)	20 mm (1 mark)
H-I	144 (½ mark)	25 - 32 (1 mark)	D-F	24 (½ mark)	20 mm (1 mark)
I-K	72 (½ mark)	25 mm (1 mark)	D-E	24 (½ mark)	20 mm (1 mark)
I-J	72 (½ mark)	25 mm (1 mark)			

Length of longest run	65 m (1 mark)
Design pressure drop	0.23 kPa (½ mark)
Installation pressure drop/m	0.003 – 0.0036 (1 mark)

**Total 19 marks**

## ANSWER 6

- (a) Measurement 'X' correct (200 mm). (2 marks)  
Corrugations crossed according to the wind zone (2 crests finish in trough). (1 mark)  
Dektite on angle. (1 mark)  
Soaker flashing terminating under ridge flashing or cover sheet (250 mm). (2 marks)  
Fixing of dektite to soaker flashing. (1 mark)  
Drawing quality. (1 mark)
- (8 marks)
- (b) Any THREE (1 mark each)
- Cut building wrap to suit pipe.
  - Install duct inclined downwards to outside.
  - Seal penetration of building wrap to pipe with flashing tape.
  - Seal cladding to pipe using a suitable sealant.
- (3 marks)
- (c) Any TWO (1 mark each)
- Compatible with adjacent building materials.
  - Only used in fully concealed locations.
  - Tape will comply with Parts 3.2 and 4 of ICBO Acceptance Criteria AC148.
- (2 marks)

**Total 13 Marks**

## ANSWER 7

- (a) Any FOUR (1 mark each)
- Gas-fitting on newly constructed or imported gas installations.  
Extensions and additions to, and replacements of, existing gas installations.  
Alterations to gas installations that result in repositioning of pipework or changes to the operation of the installation.  
Repairs to gas installations, gas appliances, or fittings following accidents that are notifiable under section 17 of the Act.  
Reinstalling a system that has been disconnected from a gas supply for more than six months.
- (4 marks)
- (b) Any TWO (1 mark each)
- Any work on any pipes or fittings supplied with liquefied petroleum gas from any portable gas storage container or containers that have, or together have, a maximum capacity of 15 kilograms of liquefied petroleum gas.  
Any gas-fitting that replaces a gas appliance with an equivalent gas appliance.  
Any gas-fitting that replaces a fitting in an installation with an equivalent fitting if the fitting is instrumentation and related controls and the work does not result in repositioning or disturbance of pipework, other than instrumentation and related controls pipework.
- (2 marks)
- (c) Fall arrest system: Stops a person striking the ground once fallen (e.g. harness).  
Fall prevention system: Stops a person from falling (e.g. safety rail).
- (4 marks)

**Total 10 Marks**

## ANSWER 8

- (a)  $2.8 \times 3 = 8.4 \text{ m}^2$  (1 mark)  
 $8.4 \times 0.006 = 0.0504 \text{ m}^2$  (1 mark)  
0.0504 m<sup>2</sup> required at each end (1 mark)

(3 marks)

- (b) Any FOUR (1 mark each)  
Measurement systems.  
Gas quality.  
Gas composition.  
Normal and emergency operating conditions.  
Environment.

(2 marks)

**Total 5 Marks**

## ANSWER 9

- (a) Any FOUR (1 mark each)  
Hazard management procedures.  
Emergency procedures.  
Accident register.  
Hazard register.  
Accident/incident report forms.

(2 marks)

- (b) Any FIVE (1 mark each)  
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 your local Department of Labour office as soon as possible by phone, fax or email.  
Complete your own investigation and take steps to eliminate, isolate or minimise any identified significant hazard.  
Email, post or fax a written notice to the nearest Department of Labour office within 7 days.

(5 marks)

**Total 7 Marks**

## SECTION B

- 1 A When it has a mass of 20 kg or less.
- 2 D 450 mm
- 3 A 150 mm – 300 mm below finished ground level.
- 4 C 600 mm
- 5 A 3.5 kPa
- 6 C 1000 mm
- 7 B 10 days
- 8 A 5 days
- 9 D Any flue gases that may leak from the flue could be spread within the building.
- 10 B Manual shut-off valve, Manual reset low pressure switch, Non- return valve.
- 11 A 1%
- 12 D 20%
- 13 E 100%
- 14 D 75 mm
- 15 D The owner/occupier and Energy Safety.
- 16 C 3 m
- 17 B 300 mm
- 18 C 75 mm

**Total 18 Marks**