No. 9196

Plumbers,
Gasfitters and
Drainlayers Board

REGISTRATION EXAMINATION, NOVEMBER 2012

CERTIFYING GASFITTER

ANSWER SCHEDULE

ANSWER 1

(a) Any FOUR (½ mark each)

- Hazards and how to avoid them.
- How and when to use safety equipment.
- Use of specialist plant and machinery.
- First Aid equipment and procedures.
- Emergency procedures.
- Job responsibilities. (2 marks)

(b)
- Licensed registered plumbers.
- Trainee plumbers.
- Exemption holders. (3 marks)

Total 5 Marks

ANSWER 2

(a) (i) The Department of Labour. (1 mark)

(ii) The form should be posted or faxed to the Department of Labour office to arrive at least 24 hours before the work is due to start.

(1 mark)

(iii) If it is necessary to deal with an emergency arising from

Damage caused by any earthquake, explosion, fire, flood, lightning, rain, slip, storm, or washout; or

The blockage or breakdown of any drain or sewer; or

The blockage or breakdown of any distribution system or network for electricity, gas, telecommunications, or water.

(1 mark)

(b) Any FIVE (1 mark each)

- Any restricted work, as defined in regulation 2(1) of the Health and Safety in Employment (Asbestos) Regulations 1998.
- Any commercial logging operation or tree-felling operation.
- Any construction work of one or more of the following kinds:
- Work where workers could fall 5 m or more, excluding work on a two-storeyed house, or work on a power or telephone line, or work carried out from a ladder only, or maintenance or repair work of a minor or routine nature.
- The erection or dismantling of scaffolds from which a person could fall 5 m or more.
- Every excavation which is more than 1.5 m deep and which is deeper than it is wide at the top.
- Any form of tunnel or drive where workers work underground, irrespective of timbering or support.
- Those excavations where the excavated face is steeper than 1 horizontal to 2 vertical.
- Any construction work where explosives are used or stored.
- Work such as diving, where construction workers breathe air or any other gas that has been compressed or is under pressure.
- Any construction work in connection with asbestos fibres.
- Lifts of half a tonne (500 kg) or more (a vertical distance of 5 m or more) carried out by mechanical means other than by a mobile crane, excavator or forklift.

(5 marks)

Total 8 Marks

ANSWER 3

(a) Every employer must provide reasonable opportunities for their employees to participate effectively (in on-going processes) for improvement of health and safety in the employees' places of work.

(1 mark)

(b) This applies if 1 or more of the employees require the development of a system or an employer has 30 or more employees.

(1 mark)

(c)

- An Improvement Notice.
- A Prohibition Notice.
- An Infringement Notice. (3 marks)

Total 5 Marks

ANSWER 4

(a) (i) Sprinklers, fire, alarms, fire extinguishers and fire hoses that activate or are actively used to fight a fire.

(1 mark)

(ii) Fire stop collars, wraps, and mastics and are used to maintain the fire rating of a wall or room (cell).

(1 mark)

(b)
- Wall and pipe
- Collars both sides
- Collars fixed to wall
- Sleeve through hollow section (4 marks)

(c) Swells when exposed to heat. (1 mark)

Total 7 Marks

ANSWER 5

To provide **ventilation** and prevent external **moisture being accumulated or transferred** and causing condensation, fungal growth, or the degradation of building elements.

Total 2 marks

ANSWER 6

Any TWO (1 mark each)

- A confined space is defined as an enclosed or partially enclosed space that is not intended as a place of work.
- It is liable to have an atmosphere that contains harmful contaminants or not contain a safe oxygen level.
- It may have contents that could cause engulfment.
- It may have restricted means for entry and exit.

Total 2 Marks

ANSWER 7

(a)
- Label attached to the meter or cylinders.
- Make or trade name on the label. (2 marks)

(b) To permit future extension or connection to a non-compatible piping system. (1 mark)

(c) Standard thread.
Copper tube. (1 mark)

(d) 30% of 36 m = 10.8 m (10 m) (1 mark)
3 fittings (1 mark)
Equally spaced (1 mark) (3 marks)

Total 10 Marks

ANSWER 8

Section	Section Length
A - B	4.5 - 5.5
B - F	1.5 - 2.5
B - C	3 – 3.5
C - E	2.5 – 3.5
C - D	3 - 4
F - G	1 – 1.5
G - H	1.5 - 2
G - I	5.5 – 6.5
F - J	5 – 5.5
J - K	1.4 – 1.6
J - L	5 - 6

Section lengths	(½ mark each)
Main run valves	(1 mark)
Gas flow valves	(½ mark each)
Pipe sizes	(1 mark each)

Section	Main Run m	Gas Flow MJ/h	Nominal Size
A - B	16 - 20	329	32
B - F	16 - 20	123	20
B - C	16 - 20	206	25
C - E	16 - 20	18	10
C - D	16 - 20	188	25
F - G	16 - 20	50	15/20
G - H	16 - 20	20	10/15
G - I	16 - 20	30	15
F - J	16 - 20	73	20
J - K	16 - 20	55	20
J - L	16 - 20	18	10

Total 23 Marks

ANSWER 9

(a)
- Automatically change from an in use cylinder to a reserve cylinder.
- Maintain constant installation pressure. (2 marks)

(b) The primary cylinder cannot keep up with vaporization and the pressure has dropped causing the regulator to change to the reserve. (1 mark)

(c) Any TWO (½ mark each)
- More Cylinders
- Vaporiser
- Cylinders located in warmer position (1 mark)

Total 4 Marks

ANSWER 10

(a) The water comes from the flue gases cooling while in the flue and condensing into water, running down the baffle to drip on the burner.

(2 marks)

(b) It occurs more when the water heater is cold because the cold sides of the tank cool the flue gases faster than normal.

(2 marks)

Total 4 Marks

ANSWER 11

(a)

Flue Section	Minimum Size
A	125 mm
B	125 mm
C	100 mm
D	75 mm
E	75 mm

(5 marks)

(b) Any TWO (1 mark each)
- Cost, it may keep the size of the flue down.
- Space restrictions.
- Minimum required flue height for the appliance. (2 marks)

(c)
- Next size up flue connector
- Increase connector rise by 300 mm
- Deduct 10% from the table listed capacity for each change of direction (3 marks)

Total 10 Marks

ANSWER 12

(a)
- Permanent Natural ventilation
- Direct to outside
- At least two high and low
- In accordance with 6.4.4.2 and 6.4.4.4 (2 marks)

(b) Any TWO (1 mark)
- Appliance installed in a sealed recess
- Openings, top and bottom directly to outside
- 45,000 mm^2 free ventilation area (2 marks)

Total 4 Marks

SECTION B

1. C 3 kPa
2. D 25 mm
3. C 6 mm
4. B 80%
5. A 7 kPa
6. E 20 mm
7. D 1.8 m
8. C 5 mm
9. D 164 MJ/hr
10. B 7 kPa
11. C 0.4 $MJ/hr/m^3$
12. E 1000 mm^2
13. E 1350 mm
14. C 1 m
15. A 2 m
16. C 440ºC
17. B 12%
18. C&D 100 kg
19. B 1.5 m

Total 19 Marks