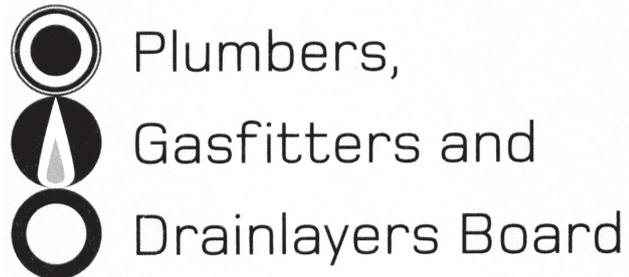


No. 9194



CRAFTSMAN EXAMINATION, JUNE 2008
COMMON

ANSWER SCHEDULE

ANSWER 1

- (a) The fire rating of the selected collars must match or exceed the fire rating of the wall through which the pipe is to pass. (1 mark)
- (b) 1 The centre of the tank platform to be sited no more than 300 mm from a load bearing wall.
2 Solid blocking (dwangs or nogs) between ceiling joists, at the edge and base at 600mm centre.
3 If condensation would compromise the durability H3 timber should be installed.
4 Decking made of 16mm thick strip or sheet flooring timber. (4 marks)
- (c) 600 mm (1 mark)

Total 6 marks

ANSWER 2

- (a) Volume of hall = $24 \times 12 \times 5.5$
= 1584m^3 (1 mark)
 1584×45 = 71280 Watts/hr (1 mark)
 $\frac{71280}{1000}$ = 71.28 kW/hr (1 mark)
 $\frac{71.28}{18}$ = 3.96
Therefore 4 heaters will be needed (1 mark) (4 marks)
- (b) $10 \times 4 \times 4$ = 160m^3 (1 mark)
 160×5 = 800 m³/hr (1 mark)
 $\frac{800}{60 \times 60}$ = 0.2222 m³/sec (1 mark)
= 0.2222×1000 (1 mark)
= 222.2 litres per second (1 mark) (5 marks)

Total 9 marks

ANSWER 3

Employers shall take all practicable steps to:

- 1 Provide and maintain for employees a safe working environment.
- 2 Provide and maintain for employees while they are at work facilities for their safety and health.
- 3 Ensure that plant used by any employee at work is so arranged, designed, made and maintained that it is safe for the employee to use.
- 4 Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things –
 - a) In their place of work or
 - b) Near their place of work and under the employer's control.
- 5 Develop procedures for dealing with emergencies that may arise while employees are at work.

(Any FOUR, 2 marks each)

Total 8 marks

ANSWER 4

- | | | |
|-----|---|----------|
| (a) | To give detailed locations, dimensions and requirements for the job | (1 mark) |
| (b) | To provide details of standards and materials for the work to be done | (1 mark) |
| (c) | To provide details of how the contract is to be administered including payment arrangements, commencement and completion dates etc. | (1 mark) |
| (d) | Details of any requirements outside the standard contract conditions e.g. noise, access and hours of work. | (1 mark) |
| (e) | Details of the quantities and types of materials to be used to complete the contract | (1 mark) |
| (f) | The form provided for the tenderer to submit their tender in an acceptable format | (1 mark) |

Total 6 marks

ANSWER 5

Item	Description	Qty	Unit	Labour rate	\$	C	Material rate	\$	C
1	Galv. pipe 65mm	7.9	m	3.75	29	63	28.53	225	39
2	Galv. pipe 50mm	12.6	m	2.50	31	50	20.77	261	70
3	Galv. pipe 40mm	13.9	m	2.50	34	75	14.76	205	16
4	Galv. pipe 32mm	41.9	m	1.66	69	55	12.85	538	42
5	Galv. pipe 25mm	32.4	m	1.66	53	78	9.98	323	35
6	Galv. bend 65mm	2	ea	15.00	30	00	22.63	45	26
7	Galv. bend 50mm	4	ea	15.00	60	00	9.82	39	28
8	Galv. bend 40mm	2	ea	12.50	25	00	6.33	12	66
9	Galv. bend 32mm	7	ea	6.00	42	00	4.57	31	99
10	Galv. bend 25mm	10	ea	6.00	60	00	2.86	28	60
11	Galv. tees (all sizes)	11	ea	15.00	165	00	22.00	242	00
12	Ball-valve 65mm	1	ea	15.00	15	00	217.67	217	67
13	Ball-valve 50mm	1	ea	15.00	15	00	84.32	84	32
14	Ball-valve 40mm	2	ea	14.00	28	00	53.86	107	72
15	Ball-valve 32mm	3	ea	6.00	18	00	35.84	107	52
16	Ball-valve 25mm	10	ea	6.00	60	00	24.03	240	30
17	Denso wrapping to pipe	108.7	Sum	2.00	217	40	5.97	648	94
18	Marker tape	108.7	Sum	.60	65	22	.89	96	74
19	Trenching and backfill							2435	00
20	Sand fill in place							987	00
	Sub totals				1019	83		6879	02
	Total labour and materials							7898	85
	Profit (margin of 22%)							1737	75
	Total excl. GST							9636	60

Pipe size mm	Quantity m	Upper limit (+5%) m	Lower limit (-5%) m
65	7.900	8.30	7.50
50	12.600	13.23	11.97
40	13.900	14.60	13.20
32	41.900	44.00	39.80
25	32.400	34.02	30.78

When marking allow a margin of + or -5% on the true quantities of pipe, denso tape wrapping and marker tape. NOTE: THIS ALLOWANCE DOES NOT APPLY TO ANY OTHER ITEMS.

	Quantity m	Upper limit (+5%) m	Lower limit (-5%) m
Denso tape wrapping	108.7	114.14	103.26
Marker tape	108.7	114.14	103.26

(Items 1 to 5 – 1½ marks each correct row. NOTE: deduct 1 mark for each incorrect pipe quantity, 7½ marks)
 (Items 6 to 18 – ½ mark each correct row, 6½ marks)
 (Items 19 to 20, no marks)
 (Sub totals added correctly – ½ mark)
 (Total labour and materials, ½ mark)
 (Profit margin, 1 mark)
 (Total excluding GST, 1 mark)

Total 17 marks

ANSWER 6

(a) Any FOUR:

- 1 Pipe size
- 2 Pipe length
- 3 Roughness of pipe bore
- 4 Velocity of flow
- 5 Viscosity of the liquid
- 6 Temperature
- 7 Gradient

(½ mark each) (2 marks)

(b) $22 - 2.5 = 19.5$

$$2.7 \times 9.4 \times 7.3 \times 19.5 \times 1.23$$

$$= 4443.797 \text{ kJ} \quad (1 \text{ mark})$$

$$\div 1000$$

$$= 4.444 \text{ MJ} \quad (1 \text{ mark})$$

(c) Velocity

(2 marks)

Directly proportional to the pressure in the system.

(2 marks)

(d) The velocity of the fluid.

The cross sectional area of the outlet.

(2 marks)

(e) The velocity decreases.

The quantity of fluid increases.

(2 marks)

Total 10 marks

ANSWER 7

- (a) An event that causes or may cause any person to be harmed (1 mark)
- (b) All steps to achieve the result that is reasonably practicable in the circumstances (1 mark)
- (c) Illness or injury (or both). Also includes physical or material harm caused by work related stress (1 mark)
- (d) Any actual or potential cause or source of harm (1 mark)
- (e) A committee established to support the ongoing improvement of health and safety in a place of work (1 mark)
- (f) An employee elected to represent the views of employees in relation to health and safety at work (1 mark)
- (g) Death or permanent loss of bodily function or temporary severe loss of bodily function (1 mark)
- (h) A hazard which is an actual or potential cause of serious harm. (1 mark)

Total 8 marks

ANSWER 8

(a) They do not prescribe how work should be done, but state how completed work and its parts must perform. (2 marks)

(b) Any TEN:

- 1 Are approvals in place for the product to be used in New Zealand?
- 2 Has the product been used in New Zealand previously?
- 3 Are there satisfactory details of its history and use overseas?
- 4 Are there suitable installation instructions written in English?
- 5 Are sufficient technical details available to ascertain design requirements?
- 6 Is specialised tooling required and can it be hired or purchased at a reasonable rate?
- 7 Is special training required and available?
- 8 Is a producer statement available for the product?
- 9 Does the product have a suitable warranty and what are the terms?
- 10 Will, or can, the supplier stand by the durability requirements of the New Zealand Building Act?
- 11 Will the product out-perform the previously specified material?
- 12 Is the product compatible with other piping systems that may have to be connected to it?
- 13 Are there any limitations or restrictions on its use?

(½ mark each) (5 marks)

- (c)
- 1 Plans or drawings
 - 2 Specifications
 - 3 Conditions of contract
 - 4 Special conditions of contract
 - 5 Schedule or bill of quantities
 - 6 Tender form.

(½ mark each) (3 marks)

Total 10 marks

ANSWER 9

- (a) 1 Projected sales.
- 2 Cost of sales.
- 3 Overheads/expenses.

(1 mark each) (3 marks)

- (b) Answer to cover:

Obtain historical records

Determine expenditure in the previous period

Project expenditure to cover the next period

Set the charge out rate etc for the projected period to ensure profitability

Business Plan

(Any FOUR, 1 mark each) (4 marks)

- (c) (i) Cash flow forecasting provides a statement of expected income and payments to be made in the months ahead and it predicts your bank balance at the end of each month.
- (ii) It provides a potential lender with information about both the need for funds and the ability to repay.

(2 marks)

- (d) (i) Gross profit is the value of sales less the cost of making the sales.

(1 mark)

- (ii) Net profit is gross profit less overheads.

(1 mark)

Total 11 marks

ANSWER 10

- (a) Any FOUR:

A payment claim must

- 1 be in writing
- 2 the construction contract to which the payment claims relates
- 3 the construction work and the relevant period to which the payments relates
- 4 indicate the amount claimed and the due date for payment
- 5 indicate how the amount claimed was calculated
- 6 state that it is made under the construction contracts act.

(4 marks)

- (b) Any TWO:
- 1 be in writing
 - 2 identify the payment claim to which it relates
 - 3 indicate a scheduled amount
- (2 marks)
- (c)
- 1 The manner in which the contractor calculated the scheduled amount
 - 2 The reasons for the difference between the scheduled amount and the claimed amount
 - 3 If the contractor is withholding payment on any basis, the reasons for withholding payment.
- (2 marks)
- (d)
- 1 The subcontractor may recover the amount claimed as a debt in any court.
 - 2 The subcontractor may serve notice on the contractor to suspend the carrying out of work under the contract.
- (2 marks)

Total 10 marks

Answer 11

- (a) (i) The use of a third party or parties to reach a decision which is legally binding for all parties.
- (1 mark)
- (ii) Is an attempt to reach an agreement by use of a third party but is not legally binding.
- (1 mark)
- (b)
- 1 Unjustifiable dismissal.
 - 2 Duress.
 - 3 Discrimination.
 - 4 Sexual harassment.
- (2 marks)
- (c) An employment agreement.
- (1 mark)

Total 5 marks

