

Affix label with Candidate Code
Number here.
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Number if known

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No. 9194



Plumbers,
Gasfitters and
Drainlayers Board

CRAFTSMAN EXAMINATION, NOVEMBER 2008

COMMON

QUESTION AND ANSWER BOOKLET

Time allowed THREE hours

INSTRUCTIONS

Check that the Candidate Code Number on your admission slip is the same as the number on the label at the top of this page.

Do not start writing until you are told to do so by the Supervisor.

Total marks for this examination: 100.

The pass mark for this examination is 60 marks.

Write your answers and draw your sketches in this booklet. If you need more paper, use the blank pages at the back of this booklet. Clearly write the question number if any of these pages are used.

All working in calculations must be shown.

Candidates are permitted to use the following in this examination:

Drawing instruments, approved calculators.

The following are NOT permitted in the examination room:

Any publications, Acts, Regulations, Codes of Practice, or Standards

Check that this booklet has all of 21 pages in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION

QUESTION 1

(a) Several metal service pipes penetrate a fire rated floor, but are too close together for fire collars to be used. State TWO alternative methods of fire proofing the penetrations.

1 _____

2 _____

(2 marks)

(b) Explain the meaning of the term fire resistance rating.

(2 marks)

Total 4 marks

QUESTION 2

(a) Some heating, ventilating and air conditioning systems have a plenum supply.

(i) Explain what a plenum supply is.

(1 mark)

(ii) State the purpose of a supply plenum.

(1 mark)

(iii) State where in the system a supply plenum would normally be located.

(1 mark)

(b) A heating system is to be designed for a building. Aspects of the building and its use will influence the design of the system. List FOUR of these aspects.

1

2

3

4

(4 marks)

QUESTION 2 (cont'd)

- (c) A restaurant has an air volume of 12m^3 for each occupant. The restaurant is limited to a maximum of 128 occupants. Each occupant must be supplied with 18m^3 of fresh air each hour.

Calculate the number of air changes required each hour.

(3 marks)

Total 10 marks

QUESTION 3

- (a) A commercial building is to be erected. A building services engineer is to be engaged to design and subsequently oversee the installation of the building services.

List TEN of the services for which the engineer may be responsible.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____
- 7 _____
- 8 _____
- 9 _____
- 10 _____

(5 marks)

- (b) List TEN tasks that a building services engineer would be expected to carry out as part of his or her professional duties.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____
- 7 _____
- 8 _____
- 9 _____
- 10 _____

(5 marks)

Total 10 marks

QUESTION 4

(a) A large contracting plumbing and gasfitting company employs an estimator or a quantity surveyor. List EIGHT tasks the estimator would normally be expected to carry out.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____
- 7 _____
- 8 _____

(4 marks)

(b) A qualified quantity surveyor is employed by a building developer/owner. List SIX tasks the quantity surveyor would be expected to carry out.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____

(6 marks)

Total 10 marks

QUESTION 5

(a) List the THREE main elements that comprise a quotation.

- 1 _____
- 2 _____
- 3 _____

(3 marks)

(b) A contract includes provision for disputes over payment to be resolved in accordance with the Construction Contracts Act. State how and by whom the Act specifies that such disputes are to be resolved.

(1 mark)

Total 4 marks

QUESTION 6

(a) A gas or water piping system is to be designed for an apartment block. List SIX key design factors that should be considered when sizing the pipework for each part of the system.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____

(6 marks)

(b) Give the meaning of the following terms in relation to the design of piping systems.

- 1 Pressure drop: _____

- 2 Index length: _____

- 3 Velocity: _____

- 4 Available pressure: _____

- 5 Erosion: _____

- 6 Turbulence: _____

(3 marks)

Total 9 marks

QUESTION 7

(a) An employee believes that carrying out certain work will result in serious harm to him or her. State TWO actions that the employee may take in this regard.

1 _____

2 _____

(2 marks)

(b) State how a health and safety representative must be appointed, and who he or she represents.

(1 mark)

(c) List FOUR duties of a health and safety representative.

1 _____

2 _____

3 _____

4 _____

(4 marks)

QUESTION 7 (cont'd)

(d) Explain the employer's obligations to the training of a health and safety representative.

(2 marks)

Total 9 marks

QUESTION 8

(a) Give THREE reasons for commissioning completed plumbing or gasfitting installations.

- 1 _____

- 2 _____

- 3 _____

(3 marks)

(b) In relation to the New Zealand Building Act, state the TWO aspects covered by a product certificate.

- 1 _____

- 2 _____

(2 marks)

(c) Explain the essential difference between product certification and product appraisal.

- _____
- _____
- _____

(2 marks)

QUESTION 8 (cont'd)

- (d) The New Zealand Building Act requires that systems for the heating, storage and distribution of hot water must be energy efficient. State the TWO requirements to be met in order to achieve this.

1 _____

2 _____

(2 marks)

Total 9 marks

QUESTION 9

Answer the following questions in relation to the Health and Safety in Employment Act.

(a) Give the meaning of the term infringement offence.

(1 mark)

(b) State the purpose of an infringement notice.

(2 marks)

(c) State who legally can issue an infringement notice.

(1 mark)

(d) Give the grounds on which an infringement notice may be issued to a person.

(2 marks)

Total 6 marks

QUESTION 10

(a) A plumbing/gasfitting company purchases a trenching machine. List EIGHT factors, excluding the operator's wages, that should be included in the calculation of the charge-out rate for the machine.

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____
- 7 _____
- 8 _____

(4 marks)

(b) Because of non-cash benefits provided to employees, businesses may be liable for the payment of Fringe Benefit Tax. Give THREE examples of a fringe benefit.

- 1 _____

- 2 _____

- 3 _____

(3 marks)

Total 7 marks

QUESTION 11

A plumber/gasfitter is registered for Goods and Services Tax (GST). The plumber/gasfitter purchases a new van for \$24 000.00, excluding GST, for his business. The van is not to be available for private use.

- (a) State whether or not the \$24 000.00 is tax deductible.

(1 mark)

- (b) Calculate the GST payable on the purchase price.

(1 mark)

- (c) State how the GST component of the purchase price should be dealt with after purchase.

(1 mark)

- (d) Explain how the running costs of the van should be treated for taxation purposes.

(1 mark)

- (e) Explain what is meant by depreciation.

(1 mark)

QUESTION 11 (cont'd)

(f) Explain how depreciation affects taxation.

(1 mark)

(g) The van is sold for a price in excess of the value shown in the firm's annual accounts. Explain how this affects taxation.

(1 mark)

(h) State what happens to the GST component of the sale price of the van when it is sold.

(1 mark)

Total 8 marks

QUESTION 12

List FOUR categories of people who are permitted under the Plumbers, Gasfitters and Drainlayers Act to perform sanitary plumbing and/or gasfitting work, and for each category state the conditions under which they may legally carry out the work.

1 Category: _____

Condition: _____

2 Category: _____

Condition: _____

3 Category: _____

Condition: _____

4 Category: _____

Condition: _____

Total 8 marks

QUESTION 13

(a) If a company does not have a constitution, name the Act that governs any actions of the company.

(1 mark)

(b) List TEN items of information (records) that should be kept regarding each employee by his or her employer under the Employment Relations Act.

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

(5 marks)

Total 6 marks

For Examiner's use only

Question number	Marks	Marks
1		
2		
3		
4		
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6		
7		
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9		
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11		
12		
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Total		