

B O A R D O F S T U D I E S
NEW SOUTH WALES

2007

**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Construction

General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black or blue pen
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of pages 9 and 13

Total marks – 80

Section I Pages 2–5

15 marks

- Attempt Questions 1–15
- Allow about 15 minutes for this section

Section II Pages 9–15

35 marks

- Attempt Questions 16–22
- Allow about 45 minutes for this section

Section III Pages 17–18

30 marks

- Attempt TWO questions from Questions 23–25
- Allow about 1 hour for this section

Section I

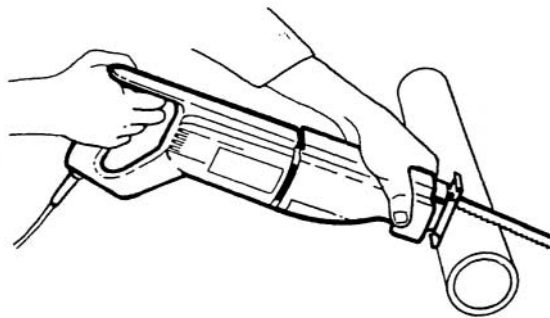
15 marks

Attempt Questions 1–15

Allow about 15 minutes for this section

Use the multiple-choice answer sheet for Questions 1–15.

- 1 Which of the following is an appropriate technique when using your body to manually lift heavy loads?
- (A) Keeping your legs straight
 - (B) Testing the load before lifting
 - (C) Keeping the load away from your body
 - (D) Keeping your feet together when possible
- 2 What is one use of a plumb bob?
- (A) Testing the accuracy of a string line
 - (B) Determining the squareness of a frame
 - (C) Transferring a point on a ceiling to the floor
 - (D) Calculating the number of brick rows in a wall construction
- 3 The diagram shows a power saw.



Which type of saw is shown?

- (A) Jig saw
- (B) Super-saw
- (C) Techno saw
- (D) Reciprocating saw

- 4 Which is the most appropriate equipment for marking a temporary line across a large concrete slab?
- (A) A chalk line
 - (B) A chalk level
 - (C) A string line and pencil
 - (D) A straight edge and pencil
- 5 To whom should any illness or accident in the workplace first be reported?
- (A) The supervisor
 - (B) The site manager
 - (C) The union delegate
 - (D) The relevant contractor
- 6 What does the term *datum* describe?
- (A) Any horizontal line that is parallel to the surface of still water
 - (B) Any survey consisting of a continuous series of connected straight lines
 - (C) Any vertical line that, if extended, would line up with the centre of the Earth
 - (D) Any reference point, line or level that may be transferred to another position
- 7 What is the main purpose of wetting down?
- (A) To isolate a large quantity of heavy dust particles
 - (B) To remove dust particles in a short period of time
 - (C) To ensure the area is clean from all foreign material
 - (D) To suppress dust particles before sweeping commences
- 8 Which of the following is NOT suitable for cleaning up using a wet and dry industrial vacuum cleaner?
- (A) Excess water
 - (B) Paint thinners
 - (C) Concrete dust
 - (D) Wood shavings

- 9** What is the main purpose of a cross-sectional plan?
- (A) To show the type of roof covering
 - (B) To show an external view of the dwelling
 - (C) To indicate sectional sizes and spacing of structural members
 - (D) To show the type of material and colours to be used in the construction of the project
- 10** What is the standard scale for longitudinal plans showing the eastern view of a building?
- (A) 1 : 10
 - (B) 1 : 20
 - (C) 1 : 100
 - (D) 1 : 500
- 11** White is one colour used in 'must do' signs.
- What is the other colour?
- (A) Black
 - (B) Blue
 - (C) Green
 - (D) Red
- 12** What is the intended effect of codes of practice?
- (A) They ensure that workers understand their job
 - (B) They provide workers with skills used within the building industry
 - (C) They require that workers have a workplace agreement before entering a site
 - (D) They provide workers with practical, commonsense, industry-acceptable ways of dealing with Occupational Health and Safety (OHS)

13 A fire is burning in the paint storage area.

What type of extinguisher should be used?

- (A) Class A
- (B) Class B
- (C) Class C
- (D) Class E

14 A brick weighs 2.67 kg and a pallet contains 160 bricks.

How much would 7.5 pallets weigh?

- (A) 3.2 tonnes
- (B) 32 000 kg
- (C) 4.272 tonnes
- (D) 427.2 kg

15 What actions should be taken when a hazardous or dangerous situation is found during a site inspection?

- (A) Rope off the area, warn others of the danger and erect hazard warning signs.
- (B) Report the situation to the site manager and leave the construction site immediately.
- (C) Report the situation to the site manager and erect safety signs around the construction site.
- (D) Rope off the area, determine the nature of the hazard or situation and put on personal protective equipment (PPE).

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Construction

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Centre Number

Section II

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Student Number

35 marks

Attempt Questions 16–22

Allow about 45 minutes for this section

Answer the questions in the spaces provided.

Marks

Question 16 (5 marks)

Delays create a number of issues on building sites.

- (a) Identify TWO possible causes for a delay in building construction. **2**

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- (b) Describe the implications that may be possible through building construction delays. **3**

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Question 17 (4 marks)

- (a) Identify appropriate items of Personal Protective Equipment (PPE) that should be worn when operating an impact power drill. 2

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- (b) Outline the indicators of an inefficient impact power drill. 2

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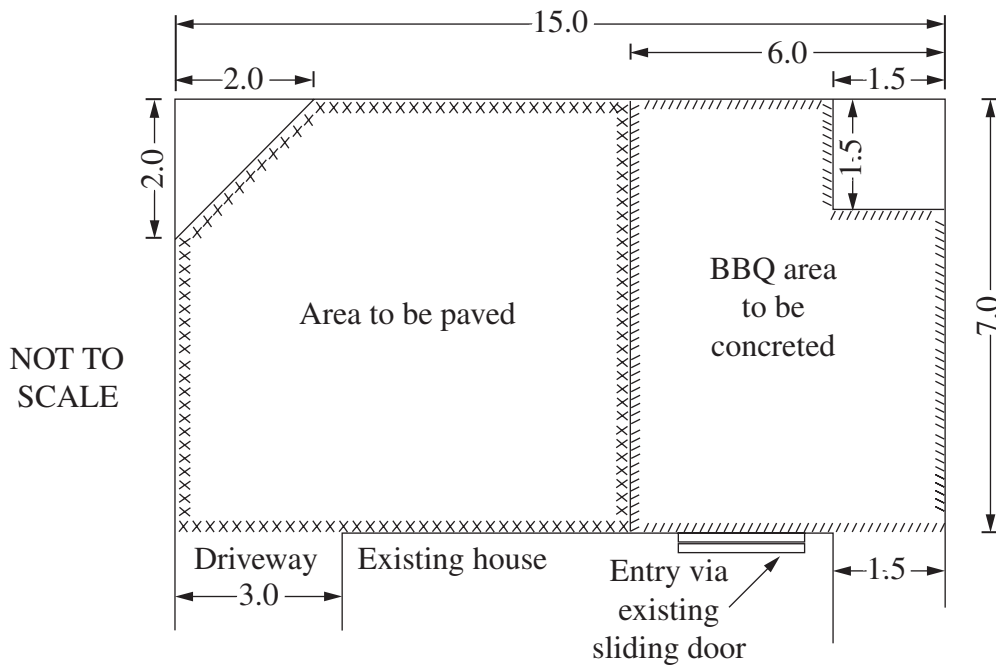
Question 18 (2 marks)

Complete the table. 2

<i>Unit of measurement</i>	<i>Use in the construction industry</i>
Metre (m)	Length of timber
.....	Excavation of soil, concrete quantity
Tonne (t)
Hectare (ha)
.....	Tin of paint

Question 19 (6 marks)

The diagram shows a proposed courtyard.



In the construction of the courtyard, one area is to be paved. The remainder of the courtyard will be a barbecue (BBQ) area to be concreted with a 125 mm thick slab.

- (a) Calculate the area, in square metres (m^2), required for paving, allowing 10% for waste. 2

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- (b) Calculate the quantity of concrete to order for the BBQ area. 2

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Question 19 continues on page 12

Question 19 (continued)

- (c) Outline the safety control measures to be implemented during construction of the courtyard. **2**

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End of Question 19

Construction

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Centre Number

Section II — (continued)

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Student Number

Marks

Question 20 (7 marks)

- (a) Identify an appropriate method a manufacturer can use to inform the consumer about hazardous substances. **1**

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- (b) Outline how a construction company would manage an emergency such as a chemical spill. **3**

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- (c) Describe what needs to be considered when storing 20 litres of a flammable liquid on a construction site. **3**

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Question 21 (7 marks)

- (a) Compare the roles of the site Project Manager and the Sub-Contractor in the construction industry. **2**

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- (b) Outline how successful teamwork may be achieved on a work site. **2**

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- (c) An apprentice has reported an incident of bullying and harassment to management. **3**

Describe the responsibilities of the site management and how they might deal with the incident.

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Question 22 (4 marks)

A risk assessment has determined that a machine-operation procedure is considered very likely to cause a permanent disability.

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Using the hierarchy of risk control, explain how this procedure may be conducted safely without risk to workers.

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Construction

Section III

30 marks

Attempt TWO questions from Questions 23–25

Allow about 1 hour for this section

Answer each question in a SEPARATE writing booklet. Extra writing booklets are available.

In your answers you will be assessed on how well you:

- demonstrate relevant knowledge and understanding
 - communicate ideas and information, using precise industry terminology and appropriate workplace examples
 - organise information in a well-reasoned and cohesive response
 - solve proposed issues or problems
-

Question 23 (15 marks)

Discuss, using examples, how a construction company could improve its waste management procedures.

In your answer, you may consider the following:

- planning and organising work routines
- reuse and recycling of materials
- disposal of materials.

Question 24 (15 marks)

Management has conducted a review of communication within a construction company. Problems have been identified in the areas of:

- employee welfare
- site safety
- site induction.

Describe and justify methods that management could use to improve workplace communication in these areas.

Please turn over

In your answers you will be assessed on how well you:

- demonstrate relevant knowledge and understanding
 - communicate ideas and information, using precise industry terminology and appropriate workplace examples
 - organise information in a well-reasoned and cohesive response
 - solve proposed issues or problems
-

Question 25 (15 marks)

The photograph shows a construction site where a fellow worker has just stumbled and fallen over waste material while moving bricks, resulting in the amputation of the worker's finger.



Explain how you and management should respond.

In your answer, you should consider the following:

- first aid management of the injury
- documentation for reporting
- strategies to reduce further on-site injuries.

End of paper