



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

2013 HSC Construction Marking Guidelines

Section I

Multiple-choice Answer Key

Question	Answer
1	A
2	C
3	C
4	B
5	D
6	D
7	B
8	D
9	A
10	D
11	A
12	B
13	C
14	B
15	A

Section II

Question 16 (a)

Criteria	Marks
<ul style="list-style-type: none">• Correct name of power tool	1

Sample answer:

A cordless impact drill/driver

Question 16 (b)

Criteria	Marks
<ul style="list-style-type: none">• Outlines an understanding of specific tool safety procedures	2
<ul style="list-style-type: none">• Shows a limited understanding of power tool safety	1

Answers could include:

- Hold the impact driver by the insulated gripping
- Make sure you have a firm footing
- Hold the impact driver firmly during operation
- Wear ear and eye protection

Question 17 (a)

Criteria	Marks
• Clearly outlines the work role of both construction personnel	2
• Identifies a limited understanding of one or both construction personnel	1

Sample answer:

A project manager has the overall responsibility to ensure the construction project runs to schedule and budget.

A quantity surveyor is responsible for the preparation of a 'Bill of Quantities'.

Question 17 (b)

Criteria	Marks
• Demonstrates a clear understanding of the importance of work team members responsibilities and duties	3
• Demonstrates some knowledge of the importance of work team members responsibilities and duties	2
• Indicates limited knowledge of work team members understanding their responsibilities and/or duties	1

Sample answer:

To improve and maintain quality assurance, efficiency and safety regulations. To prevent accidents occurring by reviewing workplace responsibilities and duties. Effective and efficient work ethic, process.

Question 18 (a)

Criteria	Marks
• Correctly identifies all labelled components	2
• Provides limited understanding of the timber frame	1

Sample answer:

W Top plate
X Stud
Y Noggins
Z Bottom plate

Question 18 (b)

Criteria	Marks
<ul style="list-style-type: none"> Indicates a clear understanding of squareness test 	1

Sample answer:

Measure both diagonals and check the measurements are the same.

Question 19

Criteria	Marks
<ul style="list-style-type: none"> Demonstrates an extensive knowledge of a range of effective workplace communication methods and the effectiveness of communication Makes a clear relationship between verbal and non-verbal methods of communication 	6
<ul style="list-style-type: none"> Demonstrates sound knowledge of a range of effective workplace communication methods and the effectiveness of communication Provides sound understanding of verbal and non-verbal communication methods 	4–5
<ul style="list-style-type: none"> Demonstrates some understanding of effective workplace communication Provides an understanding of verbal and/or non-verbal communication methods 	2–3
<ul style="list-style-type: none"> Show a limited understanding of effective workplace communication 	1

Answers could include:

- Range of communication methods
 - Verbal – Face-to-face, telephone/mobile phone, two-way radio, on-site meeting, voice signals
 - Written – Work plan, memo/message, job description/statement, roster, facsimile, email, intranet
 - Non-verbal – Gestures, signals, signage diagrams
- Advantages of verbal communication
 - First-hand information, immediate response
 - Written communication has evidence, can be used as a future or ongoing reference
- Advantages of non-verbal communication
 - Can be used in high level noise area
 - Caters for workers with language barrier
 - Can communicate with workers with special hearing needs

Question 20 (a)

Criteria	Marks
• Demonstrates a clear understanding of levelling and measurement	2
• Indicates a limited understanding of levelling and measurement	1

Sample answer:

A string 'line level' is placed in the centre of a taut line to record a level reading. The height can be measured from a datum using a dumpy level. Alternatively, use a tape measure to record the height from the ground level to the concrete height peg.

Question 20 (b)

Criteria	Marks
• Demonstrates a sound knowledge of manual handling procedures, with a link to trench excavation	3
• Shows an understanding of manual handling	2
• Shows a limited understanding of manual handling	1

Sample answer:

A worker should maintain a straight back, bend their knees and lift the load by straightening their legs. They should hold the load close to their body, use a step to assist access to the trench and provide a safe lifting height.

Question 20 (c)

Criteria	Marks
• Outlines an extensive knowledge of characteristics and features of trench setting out and specific site safety using the correct terminology	5
• Provides a sound understanding of characteristics and features of trench setting out and specific site safety	3–4
• Provides some understanding of the characteristics and features of trench setting out and/or site safety	2
• Provides a limited knowledge of setting out and/or site safety	1

Sample answer:

Set up datum reference, mark out position of profiles and pegs. Use a tape measure and builders square to check marking out. Use a square mouth shovel to dig out position of profiles. Fix pegs and profiles into the ground and attach string lines correctly. Position nails and check again for height and squareness. Site safety may include barricades, safety signs, PPE and completed risk assessment.

Question 21 (a)

Criteria	Marks
• Correctly calculates the amount of concrete volume to be ordered	2
• Shows a limited understanding of calculating volume	1

Sample answer:

$$v = 2.2 \times 12.5 \times 0.075$$

$$v = 2.063 \text{ m}^3 + (10\% \text{ wastage}) 0.21$$

$$v = 2.27 \text{ m}^3$$

Order: 2.3 m³ / 2.4 m³

Question 21 (b)

Criteria	Marks
• Correctly calculates the area of the paved area • Demonstrates an understanding of waste • Correctly calculates the sq m of pavers needed	3
• Demonstrates an understanding of the area, calculation and wastage	2
• Provides a limited understanding of calculation	1

Sample answer:

$$A = \pi r^2$$

$$= 3.14 \times 5.4^2$$

$$= 3.14 \times 29.16$$

$$= 91.61$$

$$A = 92 \text{ m}^2 + 15\% \text{ waste (13.7)}$$

$$A = 105.35 \text{ sq m}$$

$$A = 106 \text{ sq m}$$

Question 21 (c)

Criteria	Marks
• Correctly calculates the cost of labour	3
• Shows some understanding of calculation	2
• Shows a limited understanding of calculation	1

Sample answer:

$$\begin{array}{lll} \text{Labour} & = 16 \times 4 & = 24 \times 5 & = 3 \times 3 \\ & = 64 \times \$48 & = 120 \times \$48 & = 9 \times 48 \\ & = \$3072 & = \$5760 & = \$432 \\ \text{Total} & = \$9264 & & \end{array}$$

Section III

Question 22

Criteria	Marks
<ul style="list-style-type: none"> Shows an extensive knowledge and understanding of the benefits of using work schedules in the construction industry using examples Provides a clear link to the construction industry Uses precise industry terminology in a well-reasoned cohesive response 	13–15
<ul style="list-style-type: none"> Shows a sound knowledge and understanding of work schedules in the construction industry using examples Provides a relevant understanding of the construction industry Uses appropriate industry terminology in a cohesive response 	10–12
<ul style="list-style-type: none"> Shows a general knowledge and understanding of work schedules in the construction industry using examples Provides a general knowledge and understanding of the construction industry Uses appropriate industry terminology 	7–9
<ul style="list-style-type: none"> Shows a basic knowledge and understanding of scheduling in the construction industry using examples Provides reference to the construction industry Uses generic industry terminology 	4–6
<ul style="list-style-type: none"> Provides an awareness of scheduling with reference to construction industry Uses limited industry terminology 	1–3

Answers could include:

A work schedule used as a management tool in the construction industry is critically important to achieve:

Financial

- Cost of labour/contractors (pay rates)
- Delivery cost of materials at the correct time and place
- Following budgets
- Minimise material wastage

Time Management

- Trades follow the correct sequence
- Efficient use of the labour having all trades actively engaged
- Construction deadlines are made
- Prevention of trades clashing

Materials

- Materials ordered at correct trade sequence
- Correct and safe placement on-site to reduce manual handling
- Ordering correct quantities of materials for the current task

Section IV

Question 23 (a)

Criteria	Marks
• Provides characteristics and features of procedures in dealing with the emergency	3
• Provides an understanding of emergency procedures	2
• Shows a limited understanding of emergency procedures	1

Answers could include:

- Turn off gas and power
- Evacuation procedures
- First aid / CPR
- Contact emergency services (000)
- Contact site safety officer and project manager

Question 23 (b)

Criteria	Marks
• Demonstrates an extensive knowledge of incident reporting and communication procedures	4
• Demonstrates a sound understanding of incident reporting and communication procedures	3
• Demonstrates an understanding of incident reporting procedures	2
• Shows a limited understanding of incident reporting procedures	1

Answers could include:

Accident/incident report to management and NSW WorkCover. Inform gas company, such as AGL, notify the union and the contracted client. Also follow up with a site meeting to discuss the incident. Examples: incident report/injury report/workers compensation for injured workers.

Question 23 (c)

Criteria	Marks
<ul style="list-style-type: none">• Demonstrates an in-depth knowledge of risk management• Uses precise industry terminology in a well-reasoned cohesive response	8
<ul style="list-style-type: none">• Demonstrates a sound knowledge of risk management• Uses appropriate relevant industry terminology	6–7
<ul style="list-style-type: none">• Demonstrates relevant knowledge and understanding of risk management• Uses some industry terminology	4–5
<ul style="list-style-type: none">• Provides a general understanding of risk management• Uses limited industry terminology	2–3
<ul style="list-style-type: none">• Provides a limited understanding of risk management	1

Answers could include:

Identify risks / consult service plans / consult a plumber

Risk assessment process for the excavation could include:

- Elimination
- Substitution
- Engineering control
- PPE
- Hazard
- Recording
- Reporting
- Evacuation
- Site meeting for information

Training and qualifications should match the task.

Construction

2013 HSC Examination Mapping Grid

Section I

Question	Marks	Unit of competency / Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
1	1	CPCCCM1015A – Carry out measurements and calculations – page 51 CPCCCM2005A – Use construction tools and equipment – page 63–69		X	X					X
2	1	CPCCCM2005A – Use construction tools and equipment – page 69	X	X	X					X
3	1	CPCCOHS1001A – Work safely in the construction industry – page 76 CPCCCM1004A – Conduct workplace communication – page 39	X	X						
4	1	CPCCOHS1001A – Work safely in the construction industry – page 81					X	X		
5	1	CPCCCM1004A – Conduct workplace communication – page 37, 41, 60, 81	X	X			X			
6	1	CPCCCM2005A – Use construction tools and equipment – page 64, 70		X	X					X
7	1	CPCCCM1005A – Carry out measurements and calculations – page 48 & 52	X		X		X		X	
8	1	CPCCCM1002A – Work effectively and sustainably in the construction industry – page 63–64 CPCCCM2005A – Use construction tools and equipment – page 69		X	X		X			
9	1	CPCCCM2005A – Use construction tools and equipment – page 63–69		X	X		X			
10	1	CPCCCM2001A – Read and interpret plans and specifications – page 57	X	X						
11	1	CPCCCM2001A – Read and interpret plans and specifications – page 57	X		X					
12	1	CPCCCM1005A – Carry out measurements and calculations – page 52			X					
13	1	CPCCCM2001A – Read and interpret plans and specifications – page 103		X	X			X		
14	1	CPCCCM2001A – Read and interpret plans and specifications – page 96						X		
15	1	CPCCCM1005A – Carry out measurements and calculations – page 53			X				X	

Section II

Question	Marks	Unit of competency / Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
16 (a)	1	CPCCCM2005A – Use construction tools and equipment – page 64			X		X			X
16 (b)	2	CPCCCM2005A – Use construction tools and equipment – page 64			X		X			
17 (a)	2	CPCCOHS1001A – Work safely in the construction industry – page 87 CPPCCCM1002A – Work effectively and sustainably in the construction industry – page 13 CPCCOHS2001A – Apply OHS requirements – page 104		X					X	X
17 (b)	3	CPPCCCM1002A – Work effectively and sustainably in the construction industry – page 11, 14, 15, 21 CPCCCM1004A – Conduct workplace communication – page 37	X	X						
18 (a)	2	CPCCCM2001A – Read and interpret plans and specifications – page 58	X		X		X			
18 (b)	1	CPCCCM2005A – Use construction tools and equipment – page 64	X		X		X		X	
19	6	CPCCCM1004A – Conduct workplace communication – page 36–39	X	X			X			
20 (a)	2	CPCCCM2005A – Use construction tools and equipment – page 69	X				X			
20 (b)	3	CPCCOHS2001A – Apply OHS requirements, policies and procedures – page 82, 91–95 CPCCOHS1001A – Work safely in the construction industry – page 81-82		X	X					
20 (c)	5	CPCCCM2001A – Read and interpret plans and specifications – page 61			X					
21 (a)	2	CPCCCM1005A – Carry out measurements and calculations – page 49, 52–53			X					
21 (b)	3	CPCCCM1005A – Carry out measurements and calculations – page 49, 52–53			X					
21 (c)	3	CPCCCM1005A – Carry out measurements and calculations – page 49			X				X	

Section III

Question	Marks	Unit of competency / Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
22	15	CPCCCM1002A – Work effectively and sustainably in the construction industry – page 17 CPCCCM1003A – Plan and organise work – page 30 CPCCCM1004A – Conduct workplace communication – pages 37–41	X	X	X	X	X		X	

Section IV

Question	Marks	Unit of competency / Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
23 (a)	3	CPCCOHS2001A – Work safely in the construction industry – page 86 CPCCOHS2001A – Apply OHS requirements – page 104	X	X	X		X			
23 (b)	4	CPCCOHS2001A – Apply OHS requirements, policies and procedures in the construction industry – pages 91 and 98 CPCCCM1004A – Conduct workplace communication – page 40	X				X			
23 (c)	8	CPCCOHS1001A – Work safely in the construction industry – pages 84 and 99 CPCCCM2005A – Use construction tools and equipment – page 70	X	X	X		X			