2018 HSC Construction Marking Guidelines

Section I

Multiple-choice Answer Key

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

Section II

Question 16 (a)

Criteria	Marks
• Outlines TWO types of work a carpenter does in residential construction	2
• Identifies ONE type of work a carpenter does	1

Sample answer:

A carpenter is responsible for the preparation, cutting and proper installation of timber wall frames for a building. A carpenter is also responsible for the erection of roof trusses and securing them to the wall frames.

Answers could include:

- Formwork
- Decks and pergolas
- Door installation
- Window installation
- Flooring
- Fit out and finishing timber work.

Question 16 (b)

Criteria	Marks
• Describes the purpose of ONE checklist	2
• Identifies ONE relevant checklist	1

Sample answer:

To assist the carpenter to produce high-quality work they could use a materials checklist to ensure that the correct materials are available for use. The materials checklist would have the specific materials needed that match those named in the plans and specifications, to ensure a high-quality product.

Answers could include:

- Tools checklist
- Safety checklist
- Work sequencing checklist
- Quality control checklist.

Question 16 (c)

Criteria	Marks
• Clearly explains factors that can affect the planned progress of a carpenter on site	6
• Explains factors that affect planned progress on site with reference to the carpenter's progress	5
• Provides a description of factors that affect planned progress on site with some explanation of the effect of the delay	4
• Provides a basic description of factors that may affect progress	2–3
• Provides some limited information	1

Sample answer:

There are many issues that can affect the progress of a carpenter such as the weather, which could delay progress due to excessive rain, high winds or extreme heat or cold. For example, rain will delay the pouring of concrete which will then delay the carpenter building the frame. Having the correct materials on site is really important. If they are not delivered on time, this will result in a delay. If the wrong architrave is delivered to site, the carpenter will waste time sending it back and getting the architrave with the correct profile or size.

Answers could include:

- Faulty or incorrect tools and equipment
- Fixing previous problems
- Client expectations and demands
- Plant and equipment hire, and serviceability
- Availability of tradespeople
- Financial problems
- Tradespeople become available ahead of schedule
- Materials arrive early.

Question 17 (a)

Criteria	Marks
• Outlines TWO safety considerations	2
• Identifies ONE safety consideration	1

Sample answer:

When placing material in the skip you should wear appropriate PPE for the material being handled, such as gloves to protect hands. You should also consider the weight of the materials being handled or lifted into the bin which is 1 metre in height.

Answers could include:

- Safety gear: glasses, gloves, dust mask, boots, sun protection
- Use of wheelbarrow, brick trolley – other mechanical device
- Manual handling
- Keep clean area outside around bin to avoid tripping over debris around the bin.

Question 17 (b)

Criteria	Marks
• Correctly calculates the volume of the skip bin	3
• Correctly calculates the area of the trapezium • Calculates the volume of a prism	2
• Provides some relevant calculation(s)	1

Sample answer:

Cross-sectional area:
$(1.2 + 0.9)/2 \times 1.0$

Cross-sectional area multiplied by the length
$= 1.05 \times 3$

Volume
$= 3.15\ m^3$

Question 17 (c)

Criteria	Marks
• Outlines considerations for where the skip bin should be placed	2
• Identifies a location on the site for the placement of the skip bin	1

Sample answer:

The skip bin should be placed in an area on site that can be easily accessed by the delivery truck. Consideration should be given to the accessibility by workers to the skip bin.

Answers could include:

- On the street with appropriate approval
- Stable and level ground
- Doesn’t interfere with other deliveries
- Doesn’t impede the emergency egress on the site.

Question 17 (d)

Criteria	Marks
• Explains why materials are sorted on a construction site before being removed	3
• Describes the sorting of construction waste on a building site	2
• Provides some relevant information	1

Sample answer:

Construction waste is sorted on site so that materials can be recycled such as concrete for road base or plasterboard for gypsum. This reduces the amount of landfill and reduces the cost of the builder's tipping fee. Regulations from councils and other authorities require that construction waste is sorted to maximise recycling and reduce waste.

Answers could include:

- Reduce cost of tipping fees
- Increase reuse of materials
- Sort hazardous materials such as asbestos
- Reduce the likelihood of illegal dumping.

Question 18 (a)

Criteria	Marks
• Correctly calculates the volume	2
• Provides some relevant calculation(s)	1

Sample answer:

Area of the top:
18.5×16.5
$= 305.25\ m^2$

Area multiplied by depth
$= 302.25 \times 0.12$

Volume
$= 36.63\ m^3$

Question 18 (b)

Criteria	Marks
• Correctly calculates the number of timber lengths required	3
• Calculates the number of timber lengths with some errors	2
• Provides some relevant calculation(s)	1

Sample answer:

Perimeter of the slab
$(18.5 \times 2) + (16.5 \times 2)$
$= 70$ metres

Divide perimeter by the timber lengths
70/4.2
$= 16.66$

Therefore 17 lengths of 4.2 m timber were required.

Question 19

Criteria	Marks
• Describes relevant features of formal and informal meetings	4
• Outlines relevant features of formal and informal meetings	3
• Identifies general aspects of meetings	2
• Provides some relevant information	1

Sample answer:

Formal meetings will have a published agenda which people have been made aware of and formal notification of the meeting will have been issued. In the formal meeting, minutes or notes are taken which will then be published to all the participants. Informal meetings may occur between a group of people at short notice to discuss an issue. Someone will lead the meeting, but there are no set procedures, agenda or minutes taken.

Answers could include:

- Formal meetings will have a chairperson and other office bearers
- Formal meetings will have motions proposed and voting
- Informal meetings occur to exchange information about the work
- Toolbox talks/meetings can be formal or informal.

Question 20

Criteria	Marks
• Provides a clear explanation of how personal attributes can help make teams successful	6
• Demonstrates knowledge of how personal attributes can contribute to successful teamwork	5
• Describes personal attributes with links to teamwork	4
• Outlines some personal attribute(s) or a reason for successful teamwork	2–3
• Provides some relevant information	1

Sample answer:

A personal attribute would be your ability to work harmoniously with other construction workers, and within the trades cohort. This will help the team to enjoy their work, be more productive and negotiate the allocation of tasks. Team members should be able to seek help when needed so that quality work can progress. If they don't get help, work can either be delayed or done poorly. This will also result in construction delays and affects team harmony. Workers should be willing to speak up and report plant and equipment faults and problems. This will ensure a safe work environment for the team and prevent further delays on site. Team members should be willing to assist and encourage new people on their team. This will create a supportive site environment.

Answers could include:

- Willingly participates in meetings
- Allows for idea generation
- Work ethic
- Prioritises tasks
- Manages workload
- Good communication skills
- Goal setting.

Section III

Question 21

Criteria	Marks
• Shows comprehensive knowledge and understanding of the tasks and responsibilities of the site supervisor throughout the day, to ensure the smooth and safe operation of the job site • Uses precise and relevant industry terminology and workplace examples	13–15
• Shows sound knowledge and understanding of tasks and responsibilities of the site supervisor throughout the day, to ensure smooth and safe operation of the job site • Uses relevant industry terms and workplace examples	10–12
• Shows a general understanding of tasks that the supervisor is responsible for on site • Uses general industry terms and workplace examples	7–9
• Shows a basic understanding of a supervisor's tasks • Uses some industry terms and/or examples	4–6
• Provides some awareness of the role of a site supervisor	1–3

Answers could include:

At the start of the day:
- Plan the day
- Check tools
- Review the budget
- Toolbox talk
- Site inspection
- Check security
- Check sediment controls
- Conduct site inductions.

During the day:
- Check subcontractors' work for quality and progress
- Ensure site safety
- Environmental protection
- Record supply deliveries.

End of day procedure:
- Plan for tomorrow
- Order materials
- Lock up tools
- Lock up of the site
- Organise subcontractors
- Report to Project Manager
- Ensure environmental protections are in place
- Clean up.

Section IV

Question 22 (a)

Criteria	Marks
• Outlines tools and equipment needed for the construction of the completed fence	5
• Outlines most tools and equipment that would result in the completed fence	4
• Outlines some tools and/or equipment needed for the fence	2–3
• Identifies tool(s) and/or equipment that could be used for the fence	1

Sample answer:

The tools which would be needed for the project are excavation tools so that the post holes can be dug. The tools would be crowbar, mattock, spade and shovel. A tape measure would be needed to measure the location of the fence and post holes. You will need to use a string line to set out the fence as well. You will need a screw gun to fix the rails to the posts. You will need a hammer to nail in the fence palings.

Answers could include:

- Wheelbarrow or mechanical excavation tools
- Levelling tools such as spirit level, builder's automatic level, string lines
- Cutting tools such as: hand saws, jigsaws, circular saws
- Marking/setting out tools
- Measuring tools
- Concreting tools.

Question 22 (b)

Criteria	Marks
• Provides a logical and well-sequenced method for the completion of a high-quality fence • Includes quality assurance aspects for the project	9–10
• Provides a sound method to produce a high-quality fence • Makes minor errors in the sequence • Gives a general description of quality assurance	7–8
• Provides a sound description of at least one aspect of the fence OR • Provides a general process with incomplete or missing steps	5–6
• Provides some relevant information towards completing the fence	3–4
• Provides some relevant points	1–2

Answers could include:

- Basic sequence: excavation, set posts plumb and in line, secure railings, secure palings
- Planning and organising tools and materials
- Refers to plans or specification for the project
- Identifies the quality requirements of the project
- Explains the work in a logical sequence
- Minor discussion on safety aspects
- May provide a work plan, bar chart or similar to explain the sequence.

2018 HSC Construction
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 — Element 2 – p52			X					
2	1	CPCCWHS1001 Prepare to work safely in the construction industry — Element 1 Safety — HSC requirements and advice – WHS compliance – p2	X	X						
3	1	CPCCCM1014A Conduct workplace communication — Element 2 – p42	X	X						
4	1	CPCCCM1014A Conduct workplace communication — Element 1 – p38–39	X						X	
5	1	CPCCOSH2001A Apply WHS requirements, policies and procedures in the construction industry — Element 1 Safety — HSC requirements and advice – safe work procedures and practices – p4–5	X	X						
6	1	CPCCCM1015A Carry out measurements and calculations — Element 2 – p52			X				X	
7	1	CPCCWHS1001 Prepare to work safely in the construction industry — Element 2 Safety — HSC requirements and advice – risk management – p3–4	X		X				X	
8	1	CPCCCM2005B Use construction tools and equipment — Element 2 – p70							X	X
9	1	CCPCCCM2001A Read and interpret plans and specifications — Element 1 – p57					X			
10	1	CPCCCM2005B Use construction tools and equipment — Element 2 – p69			X				X	
11	1	CPCCCM1015A Carry out measurements and calculations — Element 2 – p52			X		X			
12	1	CPCCCM1013A Plan and organise work — Element 2 – p33	X				X			
13	1	CPCCOSH2001A Apply WHS requirements, policies and procedures in the construction industry — Element 1 Safety — HSC requirements and advice – WHS consultation and participation – p3		X					X	

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
14	1	CPCCCM2005B Use construction tools and equipment — Element 2 – p69							X	
15	1	CCPCCCM2001A Read and interpret plans and specifications — Element 4 – p61	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)	2	CPCCCM1012A Work effectively and sustainably in the construction industry — Element 1 – p13		X			X	X		
16 (b)	2	CPCCCM1013A Plan and organise work — Element 3 – p34	X	X	X					
16 (c)	6	CPCCCM1012A Work effectively and sustainably in the construction industry — Element 2 – p18	X				X			
17 (a)	2	CPCCWHS1001 Prepare to work safely in the construction industry — Element 2 Safety — HSC requirements and advice – risk management – p3			X				X	
17 (b)	3	CPCCCM1015A Carry out measurements and calculations — Element 2 – p52			X				X	
17 (c)	2	CPCCOSH2001A Apply WHS requirements, policies and procedures in the construction industry — Element 1 Safety — HSC requirements and advice – safe work procedures and practices – p4–5			X					
17 (d)	3	CPCCCM1012A Work effectively and sustainably in the construction industry — Element 5 – p25		X			X			
18 (a)	2	CPCCCM1015A Carry out measurements and calculations — Element 2 – p52			X					
18 (b)	3	CPCCCM1015A Carry out measurements and calculations — Element 2 – p52			X					

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
19	4	CPCCCM1014A Conduct workplace communication — Element 4 – p46	X	X		X	X			X
20	6	CPCCCM1012A Work effectively and sustainably in the construction industry — Element 1 and 3 – p13, 19	X	X		X	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
21	15	CPCCCM1013A Plan and organise work — Element 3 – p33 CPCCCM1012A Work effectively and sustainably in the construction industry — Element 1 and 2 – p14–16 CPCCCM2005B Use construction tools and equipment — Element 5 – p73	X	X	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
22 (a)	5	CPCCCM2005B Use construction tools and equipment — Element 2 – p69–70	X		X		X			

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 (b)	10	CPCCCM1013A Plan and organise work — Element 2 – p31–32 CCPCCCM2001A Read and interpret plans and specifications — Element 5 – p61–62	X	X	X	X	X	X	X	X