



Government of **Western Australia**
School Curriculum and Standards Authority



BUILDING AND CONSTRUCTION

GENERAL COURSE

Marking key for the Externally set task

Sample 2016

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Building and Construction

Externally set task – marking key

- 1(a) The owner has pointed out the termite damage to you. Besides this damage, you need to assess the complete pergola structure for suitability and compliance before agreeing to undertake any repair work. Describe **three (3)** items from either the materials used, the construction methods or the compliance issues that you would check. (3 marks)

Description	Marks
1 mark for any of the following or other suitable response: <ul style="list-style-type: none"> • check condition of all timber for damage or weathering • check the size of the timber used is suitable for loads • check fastening methods at all junctions • check pergola attachment to house is suitable • check for council approval if required 	Any three (1 mark per response)
Total	3

- (b) Sketch a sectional detail of a correct method for fixing a pergola post to the ground. Show the ground in the diagram in relation to the fixing, and include all necessary symbols to show ground or fill, and materials used. (8 marks)

Description	Marks

Description	Marks
1 mark showing concrete pad footing	1
1 mark using correct symbol for concrete	1
1 mark showing steel stirrup	1
1 mark showing ground level	1
1 mark showing correct symbol for ground or fill	1
1 mark either bolts or cast in anchors to hold stirrup to concrete	1
1 mark showing wooden post fasten to stirrups	1
1 mark for showing wooden post	1
If student shows cast in stirrup, then bolts not required for fastening stirrup to concrete, but correct coverage over top of stirrup should be indicated.	
Total	8

- (c) From your detailed sketch in Question (b), list all of the materials that you would use to fix the post in place. For each material, describe its most important property in this application. (8 marks)

Description	Marks
Timber (used for pergola post) <ul style="list-style-type: none"> • strong in compression • strong in tension • easy to work on site • resistant to weathering • can be painted easily • renewable resource • resistant to attack by insects 	1 mark per material (maximum of 4)
Galvanised steel stirrup and fasteners <ul style="list-style-type: none"> • corrosion resistant • extremely strong 	
Concrete (used for footings) <ul style="list-style-type: none"> • can be used in contact with ground • resistant to insect attack • heavy to resist lifting loads • can be formed on site to suit need • can be mixed onsite in quantities needed • easy to add fixings to 	1 mark per important property for each material (maximum of 4)
Earth (ground) <ul style="list-style-type: none"> • can support large loads if it is free of organic material and meets acceptable compaction • allows for drainage of water 	
Total	8

The diagram shows a proposed courtyard. This sketch is not to scale.

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

- 2(a) Calculate the area, in square metres (m^2), of the barbecue area. (4 marks)

Description	Marks
Correct calculation	
$6 \text{ m} \times 7 \text{ m}$	1
$= 42 \text{ m}^2$	1
Now remove upper right corner square $\Rightarrow (1.5 \times 1.5 \text{ m} = 2.25 \text{ m}^2)$	1
$= 39.75 \text{ m}^2$	1
Total	4

- (b) Calculate the volume of concrete (m^3) to order for the barbecue area. (3 marks)

Description	Marks
Correct use of formula: Volume = area x thickness	1
$= 39.75 \text{ m}^2 \times 0.125 \text{ m}$	1
$= 4.97 \text{ m}^3$	1
Total	3

- (c) Identify one possible hazard and safety control measure that may be encountered in the construction of the courtyard. (2 marks)

Description	Marks
Correctly identifies a risk	1
Identifies a subsequent correct safety control measure	1
Total	2