
2020 HSC Industrial Technology Timber Products and Furniture Technologies Marking Guidelines

Section I

Multiple-choice Answer Key

Question	Answer
1	D
2	B
3	C
4	A
5	C
6	B
7	A
8	C
9	C and D
10	B

Section II

Question 11

Criteria	Marks
<ul style="list-style-type: none"> Names one suitable Australian hardwood 	1

Sample answer:

- Jarrah.

Answers could include:

- Iron bark
- Spotted gum
- Red mahogany
- Brushbox
- Blackbutt
- Sydney bluegum
- Tallowwood
- Turpentine
- Other Australian hardwoods.

Question 12

Criteria	Marks
<ul style="list-style-type: none"> Outlines reasons for rounded edges 	2
<ul style="list-style-type: none"> Identifies a reason for rounded edges 	1

Sample answer:

Rounded edges improve safety by removing sharp edges and decreasing the risk of splinters. Rounded edges can also improve the appearance of a design.

Answers could include:

- Rounded edges decrease the possibility of edges being damaged.
- Rounded edges can decrease production costs due to the fact that adjoining faces can contain small defects with less chance of being noticed.
- Rounded edges allow an applied finish to be more durable due to less chance of damage.
- Rounded edges can make a design appear more 'smooth' and less harsh to the observer.
- It is easier to apply a finish to a rounded edge as opposed to a sharp edge.
- Finishes tend to 'pull back' from sharp edges, leaving a thinner coating.

Question 13

Criteria	Marks
• Calculates/identifies all measurements and quantities	3
• Calculates/identifies most measurements and/or quantities	2
• Provides some relevant measurements or calculations	1

Sample answer:

Part	Quantity required	Length	Width	Thickness	Total length
Leg	4	450	90	42	1800
Rail	4	175	90	42	700
Cross support	1	676	90	42	676
Cleat	2	265	42	42	530
Slat	3	900	90	30	2700

Question 14

Criteria	Marks
• Identifies a suitable joint and outlines the features of its production	4
• Identifies a suitable joint and outlines some of the features of its production	3
• Identifies a joint and provides some information about its production OR outlines some features of the production of a suitable timber joint	2
• Provides some relevant information	1

Sample answer:

Name of joint: Mortise and tenon joint

Outline of joint production: Mark out the mortise on the rail using appropriate tools. Use a mallet and chisel, mortising machine, or other suitable machinery to cut the mortise. Repeat on the opposite rail. Mark out the tenon on the cross support using appropriate tools. Cut the tenon using a tenon saw, drop saw or other suitable equipment. Dry assemble. Adjust joint to fit. Repeat on other end of cross support.

Answers could include:

- Domino joint
- Dowel joint
- Housing joint.

Question 15

Criteria	Marks
<ul style="list-style-type: none"> Names a suitable finish and provides characteristics and features of the preparation and application of the finish 	5
<ul style="list-style-type: none"> Names a suitable finish and provides characteristics and features of the preparation and application of the finish with some minor omissions <p>OR</p> <ul style="list-style-type: none"> Provides detailed characteristics and features of the preparation and application of the finish 	4
<ul style="list-style-type: none"> Names a finish and/or provides some relevant information relating to the preparation and/or application of the finish 	2–3
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

Remove dents, scratches and other imperfections with coarse abrasive paper. If a very fine surface is required, wipe down with a warm, damp cloth to raise the grain. Allow to dry and finish with finer abrasive paper, remembering to sand with the grain. Optional: Fill the grain with appropriate grain filler. Fill any nail holes with appropriate putty. Finish sand with fine abrasive paper. Remove dust. Apply 3–4 coats of **exterior polyurethane** with a cloth, brush or spray. Sand with fine abrasive paper between coats, removing dust before re-coating. Don't sand after last coat.

Answers could include:

- Exterior oil, varnish, epoxy
- Exterior finish should be specified
- Exterior polyurethane
- Exterior paint.

Section III

Question 16 (a)

Criteria	Marks
<ul style="list-style-type: none"> Provides comprehensive understanding of the characteristics and features of environmental factors that need to be considered when selecting a new site for the company 	5
<ul style="list-style-type: none"> Provides a sound understanding of the characteristics and features of environmental factors that need to be considered when selecting a new site 	4
<ul style="list-style-type: none"> Sketches in general terms environmental factors that need to be considered when selecting a new site OR <ul style="list-style-type: none"> Provides characteristics and features of one environmental factor 	3
<ul style="list-style-type: none"> Shows some understanding of environmental factors that need to be considered when selecting a new site 	2
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

The company needs to consider how the location of its operation will affect endangered species. For example, if an Environmental Impact Statement were to highlight a negative impact on endangered species, the business may need to be relocated or strategies implemented that minimise its impact on the endangered species.

Transportation also needs to be considered. For example, receiving raw materials and distributing finished products to market would require access to arterial roads, rail, air/seaports. Being in close proximity to such distribution networks reduces the impact on the environment. Personal and public transport should also provide efficient access to a workforce. Fewer cars on the road means fewer emissions.

Answers could include:

<ul style="list-style-type: none"> Alternative resources: <ul style="list-style-type: none"> power materials processes limitations. Recycling and reusing Waste management and minimisation Pollution Sustainable development Rehabilitation of commercial sites Legislative requirements: <ul style="list-style-type: none"> local state federal. 	<ul style="list-style-type: none"> Location: <ul style="list-style-type: none"> land costs and availability transportation facilities workforce impact on surrounding population resource availability geographical factors waste management environmental studies.
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Question 16 (b)

Criteria	Marks
<ul style="list-style-type: none"> Provides detailed strategies the company could implement to minimise its continuing environmental impact and provides points for and/or against 	9–10
<ul style="list-style-type: none"> Provides sound strategies the company could implement to minimise its continuing environmental impact and provides points for and/or against 	7–8
<ul style="list-style-type: none"> Describes some strategies the company could implement to minimise its continuing environmental impact <p>OR</p> <ul style="list-style-type: none"> Identifies a strategy the company could implement to minimise its continuing environmental impact and provides points for and/or against 	5–6
<ul style="list-style-type: none"> Outlines strategies the company could implement to minimise its continuing environmental impact 	3–4
<ul style="list-style-type: none"> Provides some relevant information 	1–2

Answers could include:

- Recycling
- ‘Green’ energy
- Use of off peak electricity
- Paperless office
- Use alternative resources
- Look for power-saving alternatives like LED light bulbs, motion-sensing to control lighting, LED computer monitors etc
- Prioritise buying or replacing equipment and appliances with their better energy rating alternatives.

The company must develop an environmental policy to show its commitment to the regulations, laws as well as other policy mechanisms that are concerned with environmental issues. Environmental policy affects businesses because the law impels organisations to change their operational procedures and equipment – which can cost businesses a lot of money – in order to meet those standards.

Companies must consider using fuel saving measures – power supply for machines, fuel for trucks, routes taken by trucks, operations at night near communities.

Collecting of old products from roadsides and communities – scheme for metal buy back, recycling bins in communities for dumping unwanted metal to be collected.

Use of solar energy, use of batteries to store extra solar power to be used at night. Reduce carbon footprint.

2020 HSC Industrial Technology Timber Products and Furniture Technologies Mapping Grid

Section I

Question	Marks	Content	Syllabus outcomes
1	1	Processes, tools and machinery	H1.2
2	1	Materials – fittings and allied materials	H1.2
3	1	Materials – fittings and allied materials	H1.2
4	1	Processes, tools and machinery	H1.2
5	1	Materials – fittings and allied materials	H1.2
6	1	Processes, tools and machinery	H1.2, 3.2
7	1	Materials – timber selection considerations	H4.3
8	1	Processes, tools and machinery	H1.2, H4.3
9	1	Processes, tools and machinery	H3.1, H3.2
10	1	Materials – fittings and allied materials	H4.3, H 6.1

Section II

Question	Marks	Content	Syllabus outcomes
11	1	Materials – timber selection considerations	H4.3
12	2	Processes, tools and machinery	H4.3, H6.1
13	3	Processes, tools and machinery	H3.1, H3.2, H4.3
14	4	Processes, tools and machinery	H1.2, H6.2
15	5	Processes, tools and machinery	H1.2, H4.3, H6.2

Section III

Question	Marks	Content	Syllabus outcomes
16 (a)	5	Environmental and sociological considerations	H1.2, H5.1, H7.1, H7.2
16 (b)	10	Environmental and sociological considerations	H1.2, H5.1, H7.1, H7.2