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# 2018 HSC Industrial Technology Timber Products and Furniture Technologies Marking Guidelines

## Section I

### Multiple-choice Answer Key

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

## Section II

### Question 11

Criteria	Marks
<ul style="list-style-type: none"> <li>Identifies the most appropriate power tool</li> </ul>	1

**Sample answer:**

Router.

### Question 12

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a clear outline of a method used for checking a rectangular frame for square</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

Use a tape measure to check diagonals across frame. When measurements are the same, it is square, as long as opposing sides are equal.

### Question 13

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a clear justification of the suitability of an appropriate manufactured board</li> </ul>	3
<ul style="list-style-type: none"> <li>Provides information about a suitable manufactured board</li> </ul>	2
<ul style="list-style-type: none"> <li>Identifies a suitable manufactured board</li> </ul>	1

**Sample answer:**

Suitable manufactured boards could include marine ply, exterior ply and HMR particle board. These offer dimensional stability to resist movement in moist environments. They also use water resistant adhesives to resist damage due to water.

### Question 14

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides detailed description of one technique of inlaying timber including benefits of this technique</li> </ul>	4
<ul style="list-style-type: none"> <li>Provides description of one technique of inlaying timber and/or a benefit</li> </ul>	3
<ul style="list-style-type: none"> <li>Provides main features of one technique of inlaying timber and/or a benefit</li> </ul>	2
<ul style="list-style-type: none"> <li>Demonstrates basic understanding of inlaying timber</li> </ul>	1

**Sample answer:**

Inlaying timber requires accurate measuring and cutting to ensure that there are no gaps. One technique would be to cut the timber to be inlayed on a sliding panel saw. This will ensure that it is cut accurately to the desired size. The timber to be removed for the inlay could be done with a router which has the same size straight bit as the width of the inlay. The router would be used with a fence to enable the trench to be cut consistently and parallel to the edge of the timber. Experimenting prior to cutting on the desired timber should be done to get the correct depth. Once this is completed the ends of the trench would be cut square with a chisel, and the ends of the inlay cut square with a drop saw.

### Question 15

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides detailed description of TWO advantages for each drawer runner shown</li> </ul>	5
<ul style="list-style-type: none"> <li>Provides description of TWO advantages of each of the drawer runners shown</li> </ul>	3–4
<ul style="list-style-type: none"> <li>Provides a characteristic OR feature of ONE advantage of each of the drawer runners shown</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>Provides a basic understanding of TWO advantages of one or both runners</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides a basic understanding of ONE advantage of the drawer runner/s shown</li> </ul>	1

**Sample answer:**

Full extension runners provide ease of assembly in mass production settings and offer superior strength and weight holding while allowing for full extension from the furniture unit. This full extension allows for easier access to the contents of the whole drawer. Full extension runners can be installed easily with the aid of templates and the drawers can be fully removed from the cabinet without the need to unscrew the runner from the drawer or cabinet.

Timber runners are very cheap to produce and can provide full access to the rear of the drawer in the configuration shown with a top runner installed. Timber runners can be customised and built to accommodate specific sized drawers. Sideways movement of the drawer can be minimised with the addition of the edge rails shown. Timber runners are very easily replaced at any time if they wear out.

## Section III

### Question 16 (a)

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides an explanation of how land costs and transportation facilities affect the viability of a business in the timber products and furniture industry</li> </ul>	5
<ul style="list-style-type: none"> <li>Shows a sound understanding of how land costs and transportation facilities affect the viability of a business in the timber products and furniture industry and provides some explanation</li> </ul>	4
<ul style="list-style-type: none"> <li>Shows some understanding of how land costs and/or transportation facilities affect businesses</li> </ul>	2–3
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

The timber industry commonly has large and/or heavy products to distribute. This has significant effects on land and transportation within the industry. For example, a business that manufactures dining room tables and chairs needs to evaluate the benefits of more expensive land costs closer to the city and weigh this up against the cost of transportation of delivery of products due to shorter delivery distances. The closer the land to the target market (city) the greater the costs, however, a reduction in delivery costs includes time.

**Answers could include:**

- Cause and effect > expensive inner city land > cheaper transportation due to closeness for delivery.
- Cheaper land close to saw mills in rural NSW would be financially better in regards to land costs and transport. Closer to saw mill > cheaper land > cheaper transportation of raw materials to factory > outweighs greater distribution transport costs of final products.
- Cost of leasing / cost of maintaining loan.

### Question 16 (b)

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides detailed evaluation of changes that have taken place in resource management with a clear determined value</li> </ul>	10
<ul style="list-style-type: none"> <li>Provides a sound evaluation of changes that have taken place in resource management with a clear determined value</li> </ul>	8–9
<ul style="list-style-type: none"> <li>Provides assessment of changes that have taken place in resource management with valued outcomes</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>Provides an evaluation of a change that has taken place in resource management with clear determined value(s)</li> </ul>	5–7
<ul style="list-style-type: none"> <li>Provides some explanation of change(s) in resource management and its/their effect(s)</li> </ul>	3–4
<ul style="list-style-type: none"> <li>Provides some relevant information about resource management</li> </ul>	1–2

**Answers could include:**

Resource management has undergone significant changes in the timber industry.

- Resource management is the management of all resources, equipment, tools, people, waste, materials, buildings and administration.
- In the timber industry, equipment used to convert planks of timber into furniture has changed significantly. CNC machinery is now used extensively to convert the raw material into furniture components.
- The value of CNC machinery is that although it is initially expensive regarding set-up costs (purchasing and installation of equipment, eg \$200 000) it leads to significantly cheaper costs of producing timber components. This is because a CNC machine, for example a CNC beam saw, is able to produce components significantly faster and as accurately as workers in the industry. This means significant savings in labour costs, yet a higher production rate which therefore produces greater profits for the business.
- Resource management of administration within the industry has undergone significant changes. All administration such as invoicing, payments, pay, equipment auditing, material auditing, can now be done on one computer in the business office.
- By having all the data for all areas on one computer it means just one person can manage all the administration in one place. This has changed from previous years and methods, as it allows all these different administrative areas to be covered by just one person in one place. This has brought significant savings in labour costs which means the business has greater profits.

# 2018 HSC Industrial Technology Timber Products and Furniture Technologies Mapping Grid

## Section I

Question	Marks	Content	Syllabus outcomes
1	1	Process, tools and machinery	H1.2
2	1	Process, tools and machinery	H1.2
3	1	Process, tools and machinery	H1.2
4	1	Process, tools and machinery	H1.2, H4.3, H6.1
5	1	Process, tools and machinery	H1.2, H4.3
6	1	Process, tools and machinery	H1.2, H4.3
7	1	Materials	H1.2, H4.3
8	1	Materials	H1.2, H4.3
9	1	Process, tools and machinery	H1.2, H4.3
10	1	Process, tools and machinery	H1.2, H4.3

## Section II

Question	Marks	Content	Syllabus outcomes
11	1	Process, tools and machinery	H1.2
12	2	Process, tools and machinery	H1.2, H3.2
13	3	Materials	H1.2, H4.3, H6.1
14	4	Process, tools and machinery	H1.2, H1.3, H4.3, H6.1, H7.2
15	5	Materials	H4.3, H6.1, H6.2, H7.2

## Section III

Question	Marks	Content	Syllabus outcomes
16 (a)	5	Environmental and Sociological considerations	H1.1, H5.2, H7.1, H7.2
16 (b)	10	Environmental and Sociological considerations	H1.1, H1.2, H6.1, H6.2, H7.1, H7.2