



ATAR course examination, 2018 Question/Answer booklet

MATERIALS
DESIGN AND
TECHNOLOGY
Section Three

Place a tick (✓) in one of the following boxes to indicate your examination context

Wood

Metal

Textiles

Number of additional

answer booklets used

(if applicable):

Time suggested for this section

Student number:

Suggested working time for this section: ninety minutes

Materials required for this section

To be provided by the supervisor

This Question/Answer booklet

To be provided by the candidate

Standard items: pens (blue/black preferred), pencils (including

In figures

In words

coloured), sharpener, correction fluid/tape, eraser,

ruler, highlighters

Special items: non-programmable calculators approved for use in this examination

Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised material. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

Structure of the examination

The Materials Design and Technology ATAR course examination consists of a written component and a practical (portfolio) component.

Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of written examination
Section One Short answer	3	3	20	30	15
Section Two Extended answer	4	4	40	38	25
Section Three Candidates to choose one of the following contexts:					
Wood Metal Textiles	6	6	90	75	60
				Total	100

Instructions to candidates

- 1. The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook 2018*. Sitting this examination implies that you agree to abide by these rules.
- 2. Write your answers in this Question/Answer booklet.
- 3. Answer the questions according to the following instructions.
 - Section Three: Answer all of the questions within your context: Wood, Metal or Textiles.
- 4. You must be careful to confine your answers to the specific questions asked and to follow any instructions that are specific to a particular question.
- 5. Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Section Three: Sectionalised and extended answer

60% (75 Marks)

You are required to choose **one** of the following options, according to the context you have studied in 2018.

Tick one of the boxes below to indicate your choice of context.

Context	✓	Question	Pages
Wood		8–13	4–16
Metal		14–19	18–30
Textiles		20–25	32–44

Now turn to the relevant pages and answer the questions for the context you have studied.

Section Three: Wood context

60% (75 Marks)

This	section contains six questions. Answer all questions.
Sugg	ested working time: 90 minutes.
Ques	stion 8 (10 marks)
	n designing a product, it may be necessary for a designer to test materials, finishes or truction methods to decide which is the most suitable for their project.
(a)	Explain why testing a range of materials is important when researching the most suitable material to use for a project. (2 marks)
(b)	Explain how you would carry out a workshop testing technique to test a range of materials for hardness and how you would analyse the results. (8 marks)

WOOD CONTEXT	5	MATERIALS DESIGN AND TECHNOLOGY

Use of energy and materials

Question 9 (9 marks)

Explore the life cycle of the product below. The main material used is pine. You should discuss the following:

- use of energy and materials pollution and waste management minimising waste at the end of the life of the product. For copyright reasons this image cannot be reproduced in the online version of this document, but may be viewed at https://www.amazon.com/Bc201p-Bear-Chair-Adirondack-Unassembled/dp/ B000TSKCQ0/ref-pd day0 86 4? encoding=UTF8&pd rd i=B000TSKCQ0&pd rd r=CAZCV7GVJ1GGZN58SRJ5&pd_rd_w=7k6Si&pd_rd_wg=p0jU7&psc=1&refRID=CAZCV7GV J1GGZN58SRJ5

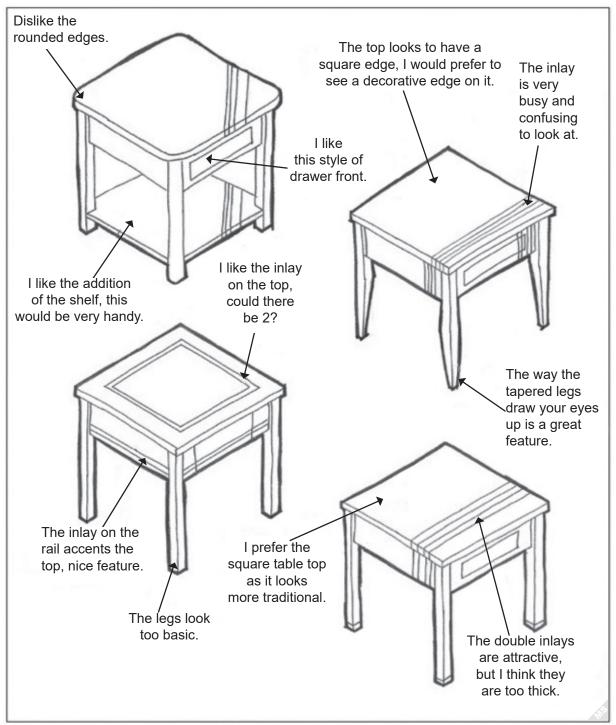
Pollution and waste management	
Minimising waste at the end of the life of the product	

Question 10 (26 marks)

Below is a range of initial concepts that a designer produced for their client. To help the designer with producing their concepts, the client gave them the following design specifications:

- the table must be jarrah to match the existing interior
- must have at least one decorative feature
- would like to see a combination of timbers being used
- there must be additional storage
- the legs must be featured
- · must not have any sharp edges.

The annotations below are the client's feedback to the designer.



See next page

Using the information on the previous page, produce a developed desicould be presented to the client. Use annotations to justify your decisions	ons. (14 n

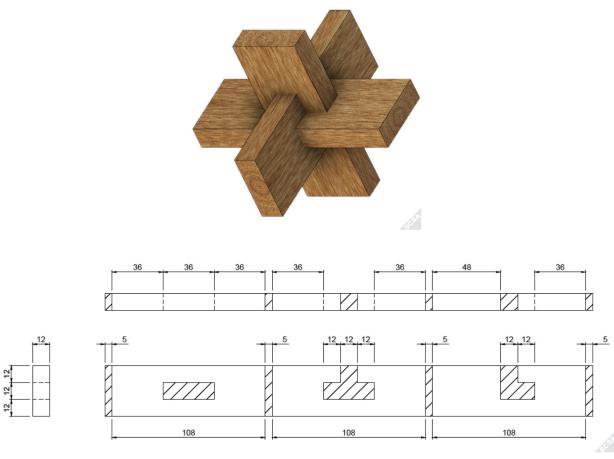
Question 10 (continued)

With reference to could be used to	produce the table top.			(6 mark
With reference to	o their properties and su	itability, compare tw	o appropriate fini	shes for th
With reference to product.	o their properties and su	itability, compare tw	o appropriate fini	shes for th (6 mark
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Question 11 (10 marks)

The images below are of a wood puzzle and its working drawing.



//// waste material

Using the correct terminology, explain how you would construct the **three** pieces that make up

the puzzle. You should mention marking out, cutting, shaping and finishing.

Question 12 (8 marks)

Globalisation of the production of materials affects both individuals and nations. With reference to **one** material, discuss the potential positive and negative impacts of globalisation of this

material on the following:	Ç
Local industry	
International industry	

(12 marks)

Question 13

Using examples, explain how you documented all six stages of the design and production process throughout your portfolio this year.

Question 13 (continued)	
	_

End of questions: Wood

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Section Three: Metal context

60% (75 Marks)

This s	ection contains six questions. Answer all questions.
Sugge	ested working time: 90 minutes.
Quest	tion 14 (10 marks)
	designing a product, it may be necessary for a designer to test materials, finishes or uction methods to decide which is the most suitable for their project.
(a)	Explain why testing a range of materials is important when researching the most suitable material to use for a project. (2 marks)
(b)	Explain how you would carry out a workshop testing technique to test a range of materials for hardness and how you would analyse the results. (8 marks)

Question 15 (9 marks)

Explore the life cycle of the product below. The main material used is mild steel tubing. You should discuss the following:

- use of energy and materials
- pollution and waste management
- minimising waste at the end of the life of the product.



Use of energy and materials
Pollution and waste management

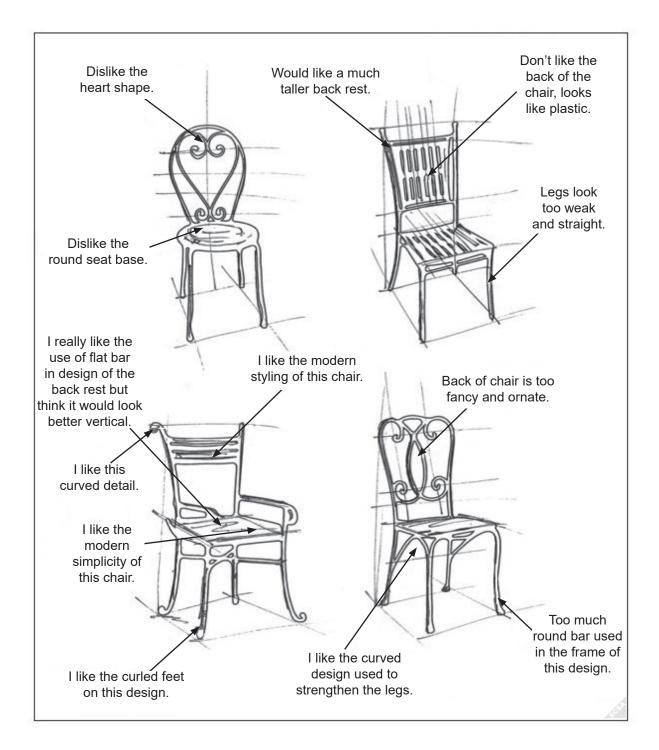
Minimising waste at the end of the life of the product				

Question 16 (26 marks)

Below is a range of initial concepts that a designer produced for their client. To help the designer with producing their concepts, the client gave them the following design specifications:

- the chair must be made from steel and coated with a weather-resistant finish
- must have at least one decorative feature
- would like to see a combination of round and flat bar used
- must be comfortable
- must not have any sharp edges.

The annotations below are the client's feedback to the designer.



Using the information on the previous page, produce a developed decould be presented to the client. Use annotations to justify your decisions to justify your decisions.	sions. (14 m

MATERIALS DESIGN AND TECHNOLOGY

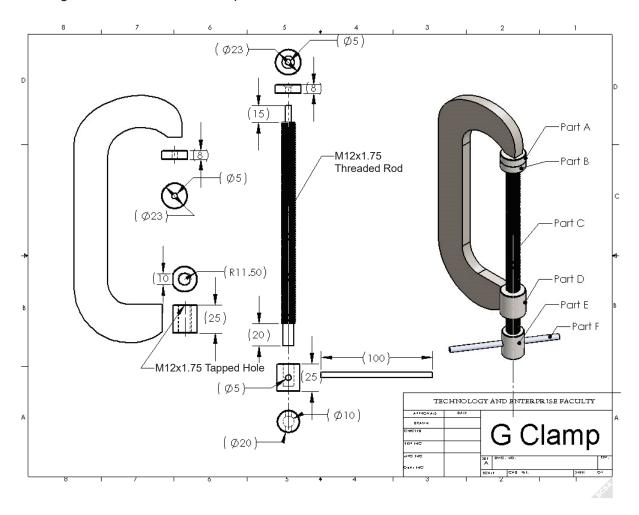
Question 16 (continued)

could be used	e to production to produce the	e chair.			(6 n
With reference	e to their prope	erties and suita	ability, compare	e two appropria	ate finishes t
With reference product.	e to their prope	erties and suita	ability, compare	e two appropria	ate finishes f (6 r
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Question 17 (10 marks)

The images below are of a G Clamp and its dimensions.



Using the correct terminology, explain how you would construct Parts A, B, C and D. You should mention marking out, cutting, joining, shaping and turning.

Question 18 (8 marks)

Globalisation of the production of materials affects both individuals and nations. With reference to **one** material, discuss the potential positive and negative impacts of globalisation of this

material on the following:
Local industry
International industry

Question 19 (1	2 marks)
Using examples, explain how you documented all six stages of the design and producti process throughout your portfolio this year.	on

Question 19 (continued)	

End of questions: Metal

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Section Three: Textiles context

60% (75 Marks)

This s	ection contains six questions. Answer all questions.		
Sugge	Suggested working time: 90 minutes.		
Ques	tion 20 (10 marks)		
	designing a product, it may be necessary for a designer to test materials, finishes or ruction methods to decide which is the most suitable for their project.		
(a)	Explain why testing a range of materials is important when researching the most suitable material to use for a project. (2 marks)		
(b)	Explain how you would carry out a workshop testing technique to test a range of materials for shrinkage and how you would analyse the results. (8 marks)		

Question 21 (9 marks)

Explore the life cycle of the product below. The main material used is polyester satin. You should discuss the following:

- use of energy and materials
- pollution and waste management
- minimising waste at the end of the life of the product.

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Ose of effergy and materials		
Pollution and waste management		

Minimising waste at the end of the life of the product					

Question 22 (26 marks)

Below is a range of initial concepts that a designer might have produced for their client. To help the designer with producing their concepts, the client gave them the following design specifications:

- the garment must be easy to put on and remove without a fastening
- must have at least one decorative feature
- jersey material must be used

TECHNOLOGY

- the playsuit must have pockets
- must not have any sharp edges.

The annotations below are the client's feedback to the designer.				
	For copyright reasons this image cannot be reproduced in the online version of this document,			
	but may be viewed at https://mccallpattern.mccall.com/m6083 (line art)			

could be p	resented to the o	client. Use anno	tations to justi	leveloped design fy your decisions	(14 mar

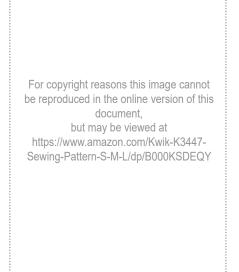
Question 22 (continued)

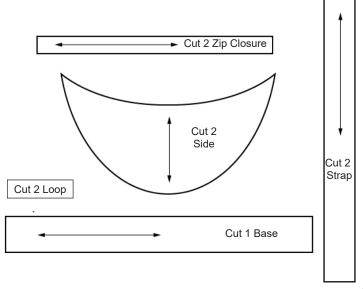
With reference to production and stre could be used to produce the side se	engtn, compare two suitable eams.	joining techniques that (6 marks
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Question 23 (10 marks)

The image below is of a saddle bag and its pattern.





Using the correct terminology, explain how you would construct all of the pieces that make up the pattern. You should mention marking out, cutting, joining and finishing.

Question 24 (8 marks)

Globalisation of the production of materials affects both individuals and nations. With reference to **one** material, discuss the potential positive and negative impacts of globalisation of this

material on the following:	
Local industry	
International industry	

Question 25 (12 ma	arks)
Using examples, explain how you documented all six stages of the design and production process throughout your portfolio this year.	

Question 25 (continued)

Supplementary page
Question number:

MATERIALS DESIGN AND TECHNOLOGY

Supplementary page	
Question number:	

Supplementary page		
Question number:		

ACKNOWLEDGEMENTS

Question 9 Image from: Bear Chair. (n.d.). Bc201p Bear Chair – pine Adirondack

chair kit – unassembled. Retrieved May, 2018, from https://www.amazon.com/Bc201p-Bear-Chair-Adirondack-

Unassembled/dp/B000TSKCQ0/ref=pd_day0_86_4?_encoding=UTF8&pd_rd_i=B000TSKCQ0&pd_rd_r=CAZCV7GVJ1GGZN58SRJ5&pd_rd_w=7k6Si&pd_rd_wg=p0jU7&psc=1&refRID=CAZCV7GVJ1GGZN58SRJ5

Question 21 Image from: PromGirl. (2018). Long wine red JVN by Jovani prom

dress. Retrieved May, 2018, from

https://www.promgirl.com/shop/dresses/viewitem-PD1619327 (top

right-hand thumbnail)

Question 22 Image adapted from: McCall Pattern Company. (n.d.). M6083: Misses'

jumpsuits, rompers and sash. Retrieved May, 2018, from

https://mccallpattern.mccall.com/m6083 (line art)

Question 23 Saddle bag image from: McCall Pattern Company. (n.d.). Kwik Sew

K3447 bags sewing pattern, size S-M-L (View D). Retrieved May, 2018, from https://www.amazon.com/Kwik-K3447-Sewing-Pattern-S-

M-L/dp/B000KSDEQY

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