



Rewarding Learning
ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2023

Centre Number

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Candidate Number

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Technology and Design

Assessment Unit AS 1
assessing
 Design and Materials



STE11

[STE11]

FRIDAY 19 MAY, AFTERNOON

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Answer **all seven** questions.

Answers to Questions **7(a)** and **7(b)** should be made on the blank A4 pro forma answer pages provided.

INFORMATION FOR CANDIDATES

The total mark for this paper is 40.

Quality of written communication will be assessed in Question **6**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	

Total Marks	
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Design and Materials

Answer **all** questions

1 A report by a product design company referred to the following terms:

- Factor of safety
- Common forms and sizes.

(a) Explain what is meant by the term factor of safety.

[2]

(b) Give **two** reasons why common forms and sizes of material may be used.

1. _____

[1]

2. _____

[1]

Examiner Only

Marks Remark

2 Chipboard and ash are used in a range of products.

- (a) Give **one** application for the use of chipboard and outline **one** advantage of chipboard which makes it suitable for your chosen application.

Application: _____

_____ [1]

Advantage: _____

_____ [1]

- (b) Give **one** property and **one** working characteristic of ash which would make it suitable for sports products.

Property: _____

_____ [1]

Working characteristic: _____

_____ [1]

Examiner Only	
Marks	Remark

5 The process of blow moulding may be used to manufacture a range of plastic bottles.

In the space below, draw a detailed annotated sketch of a blow moulding process.

Examiner Only	
Marks	Remark

[4]

BLANK PAGE

(Questions continue overleaf)

[8]

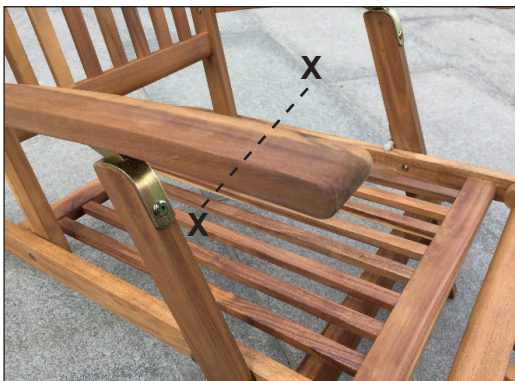
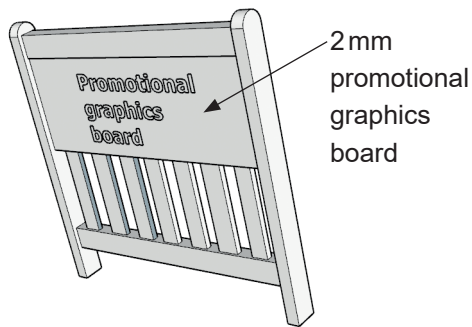
Examiner Only	
Marks	Remark

7 Fig. 1 shows a sun lounger used for outdoor corporate events together with a drawing of the frame of the back rest and a cross sectional drawing of one of the arm rests.

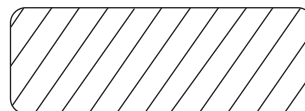
Examiner Only	
Marks	Remark



Back rest of the sun lounger



Cross sectional view of arm rest on X-X



Source: Principal Examiner

Fig. 1

In order to promote an outdoor corporate event, an attachment for the back of the frame of the sun lounger is required in order to display promotional graphics.

Using the blank A4 pro forma answer page (**answer number 7(a)**) produce an appropriate annotated design for the following:

- (a) A design which will allow the user to quickly insert or remove a 2 mm thick promotional graphics board. Show how your design is securely and safely fastened to the back of the wooden frame of the sun lounger (at the position shown in Fig. 1).

[5]

In order to facilitate the user during corporate events a tray which can be attached to the arm rest of the sun lounger is required. This will be used to hold a drinks glass and a small container for snacks.

Using the blank A4 pro forma answer page (**answer number 7(b)**) produce an appropriate annotated design for the following:

- (b)** A small tray which will safely hold a drinks glass and a container for snacks (at the position shown in **Fig. 1** (X – X)). The tray must be quickly and safely secured to the arm rest of the sun lounger without the use of hand tools.

[5]

Examiner Only	
Marks	Remark

Pro forma answer page (answer number **7(a)**)

Pro forma answer page (answer number **7(b)**)

THIS IS THE END OF THE QUESTION PAPER

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