



Rewarding Learning  
**ADVANCED SUBSIDIARY (AS)**  
 General Certificate of Education  
 2017

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]**  
**MONDAY 22 MAY, MORNING**

**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.

**INFORMATION FOR CANDIDATES**

The total mark for this paper is 40.  
 Marks for quality of written communication will be awarded for 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	
<b>Total Marks</b>	

## Design and Materials

Answer **all** questions

Examiner Only

Marks Remark

1 Explain what is meant by each of the following terms.

(a) Factor of safety: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

(b) Tolerance of a component: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

2 Stainless steel is used in the manufacture of cutlery.

(a) Give **two** properties of stainless steel which make it specifically suitable for cutlery.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

(b) Cutlery is quite often electroplated. State **two** main reasons for electroplating cutlery.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

3 Plywood and Medium Density Fibreboard (MDF) are examples of manufactured boards.

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

Application: \_\_\_\_\_  
\_\_\_\_\_ [1]

Advantage: \_\_\_\_\_  
\_\_\_\_\_ [1]

(b) Give **one** specific application (different from the application provided in part (a)) for the use of MDF and outline **one** main advantage of MDF which makes it suitable for your chosen application.

Application: \_\_\_\_\_  
\_\_\_\_\_ [1]

Advantage: \_\_\_\_\_  
\_\_\_\_\_ [1]

Examiner Only	
Marks	Remark





Examiner Only	
Marks	Remark

7 **Fig. 1** shows photographs of a shopping trolley. It is a low cost product that is suitable for heavy or bulky shopping and folds flat for easy storage when not in use. With the aid of annotated sketches, using the blank pages 7 and 8 (**answer no. 7(a) and 7(b)**), produce appropriate designs for the following:

(a) A quick and easily adjustable method that will allow the user to secure the flap to the front section of the bag at the position shown. This should allow the user to close the bag after making adjustments, if needed, in order to cater for different shopping quantities. [5]

After some use of the product it was noted that the plastic feet, which press onto the tubular frame of the trolley, became loose and detached.

(b) Produce a re-design of the plastic feet shown to enable them to be firmly secured to the tubular frame, whilst providing suitable protection to the frame and the floor surface. [5]



Source: Chief Examiner

**Fig. 1**

Answer page (answer number 7(a))

Answer page (answer number 7(b))

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**THIS IS THE END OF THE QUESTION PAPER**

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