



Rewarding Learning

ADVANCED SUBSIDIARY (AS)  
General Certificate of Education  
2019

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]

THURSDAY 16 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 Question **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.

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	

Total Marks

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## Design and Materials

Answer **all** questions

Examiner Only

Marks Remark

1 Design briefs and design development are key elements when designing.

(a) Explain what is meant by a design brief.

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[2]

(b) Explain the purpose of undertaking design development work.

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[2]

2 Pine may be used to manufacture floorboards.

(a) Give **one** main specific property of pine (other than strength) which would make it suitable to be used for floorboards.

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[1]

(b) Give **one** main working characteristic of pine which would make it suitable to be used for floorboards.

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[1]



(b) In the space below, draw a detailed annotated sketch of the rotational moulding process.

[4]

5 To assist in the design and manufacture of plastic toys many companies employ the use of solid modelling, computer-aided manufacture (CAM) and computer-integrated manufacture (CIM) for stock control.

(a) Give **one** specific characteristic associated with solid modelling.

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

(b) Briefly outline **two** main advantages of using CAM for companies manufacturing plastic toys.

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

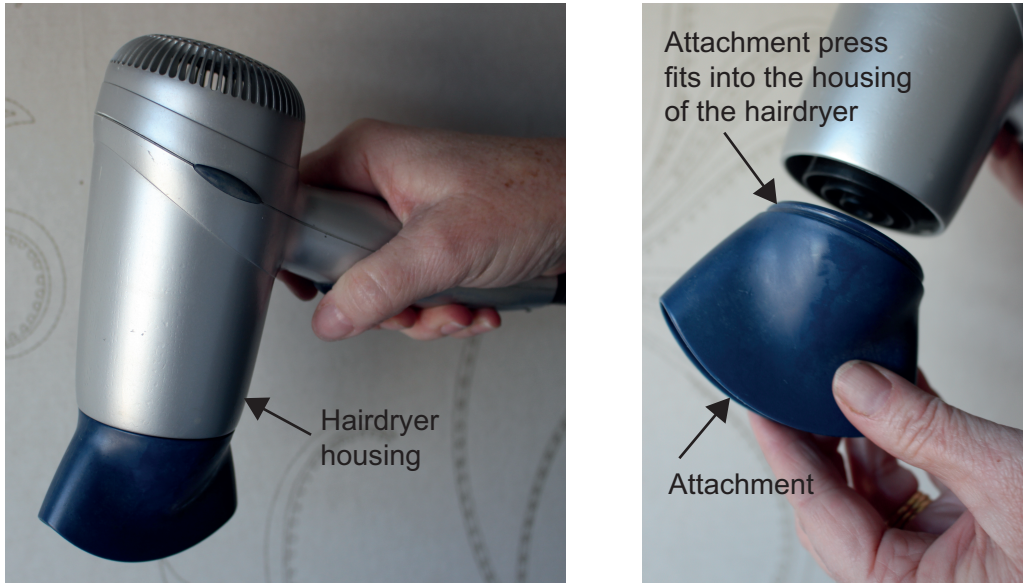
(c) Explain how companies manufacturing plastic toys could use CIM for stock control.

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

Examiner Only	
Marks	Remark



- 7 The hairdryer as shown in **Fig. 1** below is a lightweight and compact product.



Source: Chief Examiner

**Fig. 1**

For convenience of the user the hairdryer is required to be located on a wall mounted bracket. Using the blank A4 pro forma answer page (**answer no.7(a)**) produce an appropriate annotated design for the following:

- (a) A wall mounted bracket which uses the minimal amount of materials to securely hold the hairdryer while not in use. Explain how your design would be considered cost effective to produce (do not make reference to minimal use of materials in your explanation). [6]

After prolonged use of the product it was noted that the attachment which is a press fit into the housing of the hairdryer became loose and was prone to falling out. Using the blank A4 pro forma answer page (**answer no.7(b)**) produce an appropriate annotated design for the following:

- (b) A means of preventing the attachment from falling out of the housing of the hairdryer but which will allow the user to quickly remove or insert the attachment. [4]

Examiner Only	
Marks	Remark

A4 pro forma answer page (answer number **7(a)**)

A4 pro forma answer page (answer number **7(b)**)

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

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