OCR
Oxford Cambridge and RSA

Friday 7 June 2019 – Morning

A Level in Design and Technology: Fashion and Textiles

H405/01 Principles of Fashion and Textiles

Time allowed: 1 hour 30 minutes

7665335409

You may use:
- a scientific calculator
- a ruler
- pencils/pens
- geometrical instruments

H405/01

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | | | | | | Candidate number | | | | |

First name(s) _____

Last name _____

INSTRUCTIONS
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions.
- Write your answer to each question in the space provided. If additional space is required, use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.
- Where appropriate, your answers should be supported with working. Marks may be given for a correct method even if the answer is incorrect.

INFORMATION
- The total mark for this paper is **80**.
- The marks for each question are shown in brackets [ ].
- Quality of extended response will be assessed in the question marked with an asterisk (*).
- This document consists of **20** pages.

Answer **all** the questions.

1 **Fig. 1** shows a pair of baby's shoes made from a non-woven fabric.

Fig. 1

(a) Analysing **Fig. 1**, identify **two** reasons why a non-woven fabric is suitable for the baby's shoes. Justify **each** of your responses.

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2 .....

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[4]

(b) Use annotated sketches and/or notes to show how to apply a design on the baby's shoes using free machine embroidery.

[6]

(c) (i) Name **two** hand stitches which could be used to decorate the baby's shoes.

1 .....

2 .....

[2]

(ii) Use annotated sketches and/or notes to show how to work one of the hand stitches you have identified in **part (c)(i)**.

[4]

(d) Describe **two** ways in which social media could influence the commercial success of the baby's shoes.

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[4]

(e) Explain **two** reasons why physical testing would be carried out on the baby's shoes.

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[4]

2 A local playgroup is looking to replace its current collection of soft toy cubes.

Fig. 2 shows an example of an existing soft toy cube.

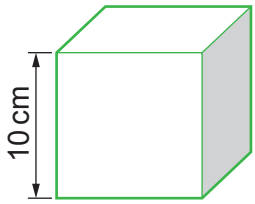
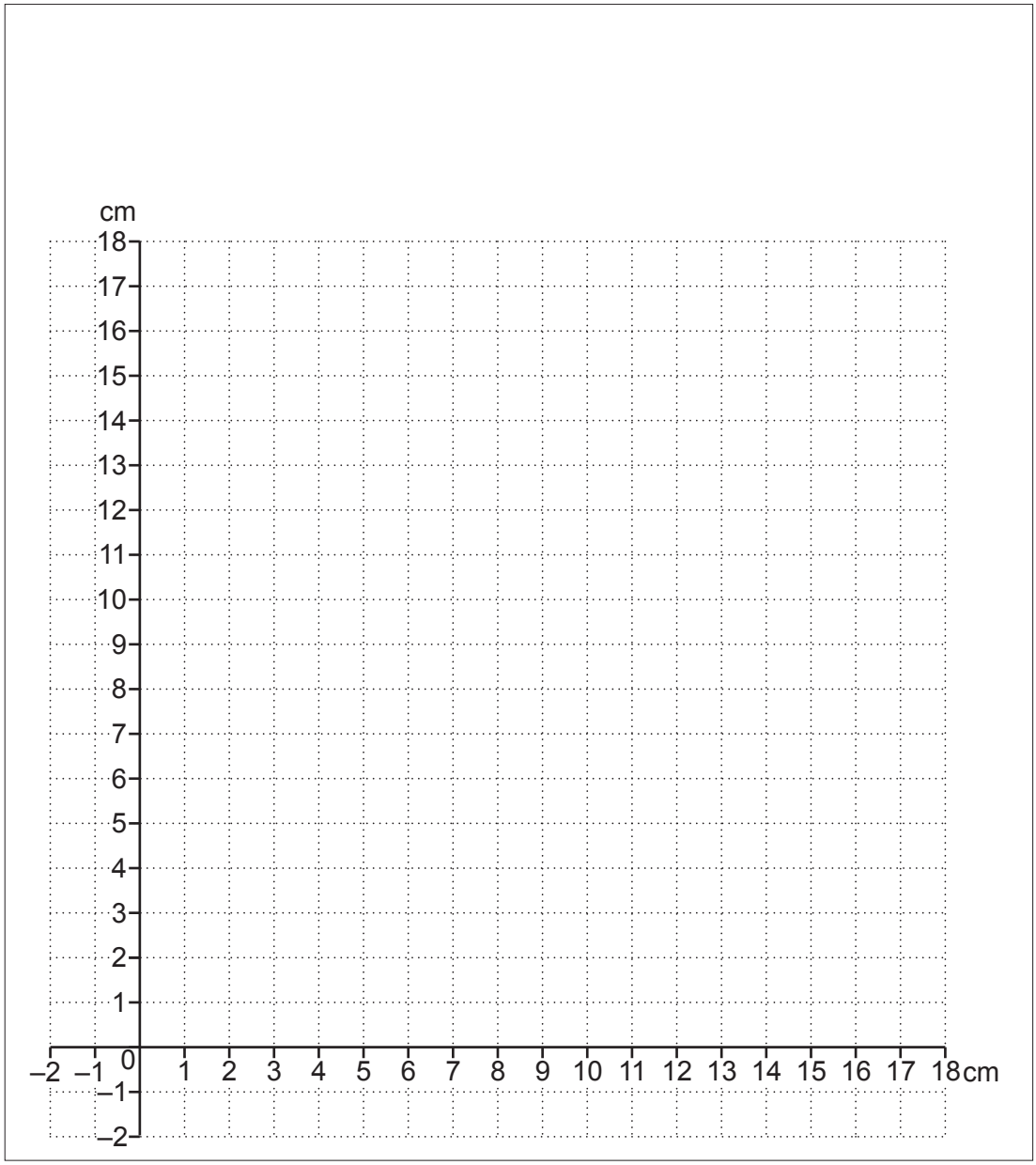


Fig. 2
(not to scale)

(a) (i) The **new collection** of soft toy cubes is to be scaled up to a ratio of 2:3

Using **Fig. 2** and the graph paper provided, draw a template for one face of the scaled-up cube labelling the two-dimensional co-ordinates. Show your working.



[3]

(ii) Using your answer to **part (a)(i)**, draw a sketch to show how the letter 'A' would appear on one side of a scaled-up cube leaving a border of 2 cm from each edge. Include dimensions.

[2]

(b) There needs to be one cube for every letter of the alphabet.

Each cube within the new collection must be identical and contain three bright colours in the ratio 3:2:1

The new collection of soft toy cubes will be made from fabric.

Each side of a cube needs a 1.5 cm seam allowance adding to allow for stitching the cube together. The fabric will be taken from a roll of material 120 cm wide.

Using your answer to **part (a)(i)**, calculate the length of material required in cm for the **dominant** colour of the new collection of soft toy cubes. Show your working.

Length of material ..... cm

[5]

(c) (i) Each cube within the new collection must be filled with expanded polystyrene (EPS).

EPS is sold in 1 kg bags. 1 kg = 50 litres and 50 litres = 1000 cm^3.

Using your answer to **part (a)(i)**, calculate how many 1 kg bags will be needed to fill the new collection of soft toy cubes. Show your working.

Number of bags .....

[3]

(ii) Using your answer to **part (c)(i)**, calculate the percentage wastage of EPS to 2 decimal places. Show your working.

Percentage wastage ..... %

[1]

(d) The new collection of soft toy cubes proves to be a real success with the local playgroup.

The designer reflects on how to develop the cubes further.

Describe **two** ways that smart materials and/or e-textiles could be incorporated into the design of future batches of soft toy cubes to enhance interest and educational value.

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2 .....

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[4]

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PLEASE DO NOT WRITE ON THIS PAGE

3 **(a)** Textile manufacturers undertake feasibility studies to determine the likely factors that influence the commercial viability of a product.

State **two** aspects that would be investigated in a feasibility study to determine the commercial viability of a fashion garment. Justify **each** of your responses.

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[4]

(b) Planned obsolescence is a strategy regularly adopted by textile manufacturers.

Discuss the implications of this strategy for both the manufacturer and the consumer.

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4 **Fig. 4** shows the front and back of a dog carrier for small breeds of dog.

front back

Fig. 4

(a) **(i)** Analyse the dog carrier in **Fig. 4** to identify **two** standard components that ensure the product functions correctly.

1 .....

2 .....

[2]

(ii) Explain **two** benefits to the manufacturer of using pre-manufactured standard components in products such as the dog carrier.

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[4]

(b) (i) The manufacturer of the dog carrier wants to create three sizes of the product – Medium (M), Large (L) and Extra Large (XL). The L carrier will not carry dogs weighing any more than 3600 g. The ratio of M, L and XL sizes to maximum dog weights is 9:12:14

Calculate the maximum weight in grams (g) of dogs that the M and XL dog carrier product can support. Show your working.

M ..... g

XL ..... g

[2]

(ii) The manufacturer has decided to reduce the retail price of the XL dog carrier by 20% as it is not proving as popular as the M and L sizes.

The retail price for the XL dog carrier is £15.99. Calculate the new retail price (£) of the XL dog carrier to 2 decimal places. Show your working.

New retail price £ .....

[1]

(c) When products such as the dog carrier are made in quantity, computer controlled cutters are used to cut many layers of fabric.

Explain **two** advantages to a manufacturer of using computer controlled cutters when mass producing textile products such as the dog carrier.

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[4]

(d) Explain **one** advantage to the manufacturer of using an overlocker to construct the dog carrier.

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..... **[2]**

(e)* Labelling of textile products is a legal requirement.

Discuss why it is important that correct labelling information is provided for the consumer on the dog carrier. **[8]**

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(f) State **one** reason why it is important that the designer of the dog carrier holds the right level of intellectual property protection on their design. Justify your response.

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..... **[3]**

END OF QUESTION PAPER

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).