Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3602U10-1

Z22-3602U10-1

WEDNESDAY, 15 JUNE 2022 – AFTERNOON

DESIGN AND TECHNOLOGY

Unit 1
FASHION AND TEXTILES

2 hours

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**10**	
2.	**10**	
3.	**15**	
4.	**20**	
5.	**20**	
6.	**25**	
Total	**100**	

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ADDITIONAL MATERIALS

In addition to this examination paper, you will need a calculator.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the continuation page at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part question. You are advised to divide your time accordingly.

The total number of marks available is 100.

You are reminded of the need for good English and orderly, clear presentation in your answers.

The quality of your written communication, including appropriate use of punctuation and grammar, will be assessed in your answer to question **4**(c).

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Answer **all** questions.

1. The eco-friendly knitted jumper made from 100% sustainable pure new wool will go through several stages during its life cycle.

(a) Before the product is launched on the market place careful consideration would have been given to the choice of yarn to knit the eco-friendly jumper.

Place ticks (✓) in the table below to indicate the **two** most appropriate reasons for choosing 100% pure new wool yarn for an eco-friendly jumper. [2]

Wool is warm to wear	
Pure wool is fully biodegradable	
Wool can be machine washed	
The wool is made from entirely sustainable natural fibres	

(b) (i) The eco-friendly jumper initially sold very well but after a few months sales levelled out.

State the name of the stage in the life cycle when sales of the eco-friendly jumper level out. [1]

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(ii) Describe what is happening to the sales of the eco-friendly jumper in the final two stages of its life cycle stated below. 2 × [2]

Decline: .....

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Obsolescence: .....

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(c) Fashion and textile products are often bought, worn a few times but then discarded.

Explain why the eco-friendly jumper will have less of an environmental impact when finally disposed of when compared to a similarly styled acrylic jumper. [3]

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2. Advances in technology and in particular Computer Aided Manufacture (CAM) offer more opportunities for design and manufacture within the fashion and textiles industry.

(a) The motif below is being stitched on a domestic computerised sewing machine. Describe in detail **one** advantage of stitching a motif on this type of machine. [2]

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(b) The multi-head industrial embroidery machine shown below also stitches motifs onto fabrics.

Explain the benefits to the manufacturer of using CAM in this way. [4]

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(c) The peplum style detail on the dress below has been cut on a laser cutter. Describe **two** advantages to the designer of using CAM in this way. 2 × [2]

Advantage 1: .....

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Advantage 2: .....

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3. The fashion and textile industry has had a major impact on the environment. Designers and manufacturers are continually looking at more sustainable practices to reduce further impact.

(a) (i) **Underline** the correct name for the symbol shown below. [1]

Mobius loop / Mobius hoop

(ii) Place **one** tick (✓) in the table below to indicate which practice would help reduce a textile product's carbon footprint. [1]

Manufacture products where there is an available workforce.	
Manufacture products close to where they will be sold.	

(b) The designer Stella McCartney uses renewable energy in the form of wind power to generate power / electricity for her shops.

(i) Name **two** other forms of renewable energy. 2 × [1]

Form 1: .....

Form 2: .....

(ii) Explain why wind power fits in with Stella McCartney's view on environmental values. [3]

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(iii) Stella McCartney has strong moral and ethical beliefs that influence the fabrics she uses in her collections. Discuss her beliefs and how they impact on her work. [4]

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(iv) Explain what other designers can learn from Stella McCartney's more ethical and sustainable approach to the fashion industry. [4]

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4. Smart materials change as a response to a change in external stimulus.

(a) (i) Study the pictures of embroidery thread below then complete the following sentences by inserting the correct words. 3 × [1]

Before exposure | After exposure

The embroidery threads shown above change ..... in response to a change in surroundings. In this example exposure to ..... causes the reaction. The embroidery threads contain a ..... dye that reacts to this change.

(ii) Describe how summer clothing for children that reacts to a change in external stimulus would appeal to the parents. [2]

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(iii) Name **two** different stimuli that would cause a reaction in a smart material. 2 × [1]

Stimulus 1: .....

Stimulus 2: .....

(b) Explain how clothing made from a tightly woven fabric offers more protection from harmful UV rays. [3]

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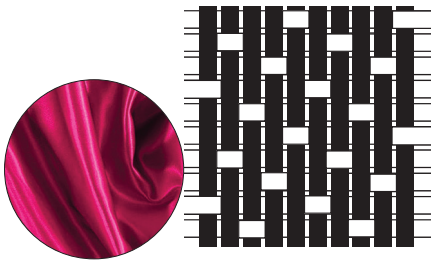
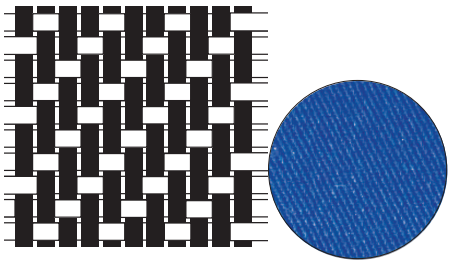
(c) Twill and satin are two different types of weave as shown in the diagrams below. Analyse the impact both these weaves have on textile fabrics and their end uses. [10]

Marks will be awarded for the content of the answer and the quality of written communication.



Satin weave



Twill weave

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5. London is one of the main fashion capitals of the world.

(a) (i) **Underline two** other leading fashion capitals in the list below: 2 × [1]

Sydney **Milan** **Lisbon** **Dublin** **Los Angeles**

(ii) Explain how trendsetters make an impact on the fashion industry. [2]

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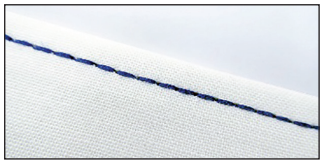
(b) Complete the table below by explaining why **each** style detail would be used on a textile product.

Style detail	Explanation
Topstitching 	.... [2]
Gathers	.... [2]
Dart	.... [2]

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(c) Manufacturers follow standard rules and guidelines when manufacturing fashion and textile products to ensure all products are fit for purpose.

(i) Evaluate the importance of quality control when manufacturing clothing in large quantities. Include specific examples of quality control measures in your answer. [5]

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(ii) Evaluate the advantages of one-off production to the customer. [5]

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6. Study the picture of the character raincoat which will be worn by young children.

(a) Explain why poppers have been used to fasten the raincoat. [2]

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(b) The raincoat has been made from polyester which has a water repellent finish.

(i) Explain how this finish is achieved and the effect it will have on the polyester fabric. [2]

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(ii) Give **two** reasons for using polyester for the raincoat. 2 × [1]

Reason 1: .....

Reason 2: .....

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(iii) The raincoat is fully lined. Describe **two** advantages to the child when wearing a fully lined raincoat. 2 × [2]

Advantage 1: .....

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Advantage 2: .....

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(iv) The visor on the hood has been reinforced in order to maintain the shape. Describe a process of achieving this. [2]

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(c) The front of the raincoat has two patch pockets. Using annotated sketches, explain how you would construct and attach the plain patch pocket. [6]

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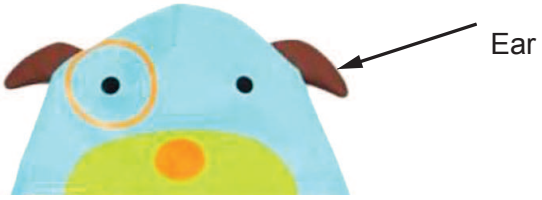
(d) The 'ears' on the hood of the raincoat shown below have been constructed so that no raw edges are visible.

Using annotated sketches describe how you would construct **one** ear. Include references to seam allowances and quality control in your answer. [7]

Note: Do not refer to attaching the ear piece to the raincoat.



Use this space for your answer.

END OF PAPER

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