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Design technology
Higher level
Paper 3

18 May 2026

Zone A morning | **Zone B** morning | **Zone C** morning

Session number

1 hour 30 minutes

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Instructions to students

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- Answer all of the questions.
- Answers must be written within the answer boxes provided.
- A calculator is required for this paper.
- The maximum mark for this examination paper is **[40 marks]**.



Section A

Answer **all** questions. Answers must be written within the answer boxes provided.

1. A custom woodworking shop created Offcut to make use of their excess hardwood, see **Figure 1**.

Depending on the random scrap hardwood shapes, the Offcut team designs and manufactures a constantly changing selection of handmade furniture products, see **Figure 2**. Offcut limited editions are unique, resulting in very fast product sales.

**Figure 1: Scrap hardwood
from custom orders**



**Figure 2: An Offcut
piece of furniture**

offcut



- (a) List **two** quality management strategies that can ensure the quality of Offcut's products. [2]

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(Question 1 continued)

- (b) Outline why empowered workers are essential to Offcut's success. [2]

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- (c) Outline how Offcut impacts the return on investment for the business. [2]

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- (d) Explain why Offcut decided **not** to adopt computer integrated manufacturing (CIM). [4]

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2. Safe Spaces is a company specializing in smart home security systems. Their Safe SS+ was the first system in the market to utilize advanced artificial intelligence (AI) algorithms, see **Figure 3**.

Market research strategies have led to the integration of Safe SS+ with various smart home devices, in line with other products on the market. The Safe SS+ system is comparable in price to other systems from leading competitors.

Figure 3: Safe SS+ system



- (a) List **two** market research strategies Safe Spaces may have used to collect information about markets or consumers.

[2]

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(Question 2 continued)

(b) Outline the pricing strategy Safe Spaces used for its Safe SS+ System.

[2]

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(c) Outline the benefit of a distinct brand identity for Safe Spaces.

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(d) Explain how the Safe SS+ is an example of a hybrid approach corporate strategy.

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Section B

Read the case study. Answer the following question. Answers must be written within the answer boxes provided.

3. Freshly Cosmetics have introduced a vegan solid shampoo bar made from natural ingredients. Together with its compatible F SolidPod applicator it is an alternative to single-use shampoo bottles, see **Figure 4**.

The triangular rounded applicator is ergonomic and prevents the shampoo bar from slipping or deteriorating during use acting as a protective case for storage and transportation, see **Figure 5** and **Figure 6**.

The applicator includes a plunger mechanism that pushes the shampoo bar out as needed. This ensures 100 % use of the shampoo bar. The applicators are recyclable, easy to refill and last for 10 years. Freshly Cosmetics is introducing a take-back scheme to recycle old applicators and use the recovered material to produce new ones.

Multidisciplinary design teams have applied life cycle analysis (LCA) and followed a user-centred design approach (UCD) throughout the design and development of the shampoo bars and applicator.

Figure 4: Freshly Cosmetics solid shampoo bar and its F SolidPod applicator



Figure 5: F SolidPod ensures a good grip



Figure 6: F SolidPod applicator product family



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(Question 3 continued)

- (a) List **two** ways government intervention may facilitate the diffusion of solid shampoo bars into the marketplace. [2]

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- (b) Outline how the rounded triangular shape of the F SolidPod applicator satisfies the transact part from the attract/converse/transact (ACT) model. [2]

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- (c) Outline why Freshly Cosmetics applied the user-centred design (UCD) affinity diagramming strategy during the design and development of their solid shampoo bars. [2]

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(Question 3 continued)

- (d) Explain why a multidisciplinary team was essential in the design and development of the F SolidPod applicator.

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(e) Explain how the F SolidPod applicator meets the requirements of decoupling, ethical consumerism **and** Datschefski's cyclic principle of sustainable design.



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References:

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Figure 2: With permission from Jason Lewis Furniture.

Figure 3: Allanswart, 2017. *Hand Pressing Modern Home Security – stock photo* [image online] Available at: <https://www.gettyimages.co.uk/detail/photo/hand-pressing-modern-home-security-royalty-free-image/832111540> [Accessed 29 May 2025]. Source adapted.

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12EP10

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12EP11

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