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Design technology
Higher level
Paper 3

19 May 2025

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

Candidate session number

1 hour 30 minutes

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Instructions to candidates

- 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. Technology company Dyson was founded in 1991 by James Dyson. The company designs and manufactures products such as vacuum cleaners, air purifiers, hairdryers and bladeless fans (**Figure 1**).

Figure 1: The Dyson product family



Dyson Zone air-purifying headphones (**Figure 2**) went on sale in early 2023 in China, the United States of America, the United Kingdom, Hong Kong, Saudi Arabia and Singapore. They are engineered to tackle the dual challenges of city noise and air pollution; combining a set of noise-cancelling headphones with a detachable visor for filtering out air pollutants.

Figure 2: The Dyson Zone



(This question continues on the following page)



(Question 1 continued)

(a) List **two** potential market segments for marketing the Dyson Zone. [2]

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(b) Identify **two** advantages of a product family for lean production. [2]

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(c) Outline the importance of testing the Dyson Zone in a natural environment. [2]

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(d) Explain how Dyson has used pioneering strategies to develop their brand over the past 30 years. [4]

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- 2. The Adidas x Allbirds performance running shoe is a collaboration between two competing companies. It has a very low environmental impact, producing less than 3 kg carbon dioxide equivalent (CO₂e) per pair by using bioplastics and recycled materials.

Figure 3: Adidas x Allbirds performance running shoe



- (a) List **two** advantages of using perceptual mapping when testing the Allbirds x Adidas performance running shoe with potential customers.

[2]

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(Question 2 continued)

- (b) Identify **one** form of promotion that could stimulate demand for the Allbirds x Adidas performance running shoe (**Figure 3**).

[2]

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- (c) Suggest how the attitudes and behaviours vary between an eco-champion **and** an eco-phobe towards the Allbirds x Adidas mid-price ranged performance running shoe priced at around USD120.00.

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Section B

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

3. The Steelcase Flex Perch stool, see **Figure 4**, was designed for flexibility and active collaboration within an office or classroom space. The leaning angle of 7.2° relieves pressure, promoting healthy body posture and improved breathing.

Figure 4: The Steelcase Flex Perch stool



[Source: Photo courtesy of Steelcase.]

The Steelcase Flex Perch stool in **Figure 4** weighs 3.9kg (8.5 pounds) and is made from a nylon resin, which is recycled from electronic waste. The stool is 100% recyclable.

Figure 5: The Steelcase Flex Perch Stool in a range of colours



[Source: Photo courtesy of Steelcase.]

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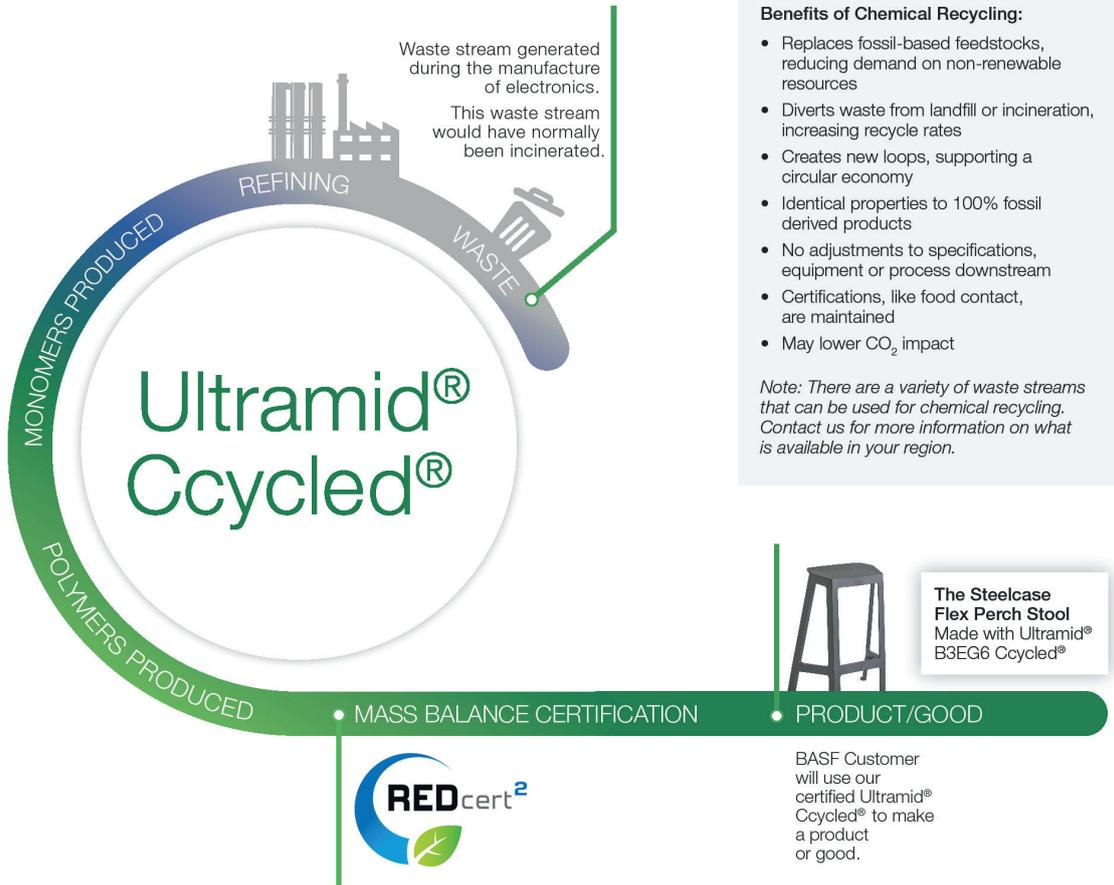


12EP06

(Question 3 continued)

Figure 6 shows the process of converting the electronic waste to create a durable material.

Figure 6: The material manufacturing process



(a) List **two** ways in which Datschefski's five principles of sustainability apply to the Steelcase Flex Perch stool.

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Turn over

(Question 3 continued)

- (b) Outline why the Steelcase Flex Perch stool increases collaboration in the office or learning environment. [2]

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- (c) Describe how a user might receive ideo-pleasure from using the Steelcase Flex Perch stool. [2]

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- (d) Explain the importance of quality control (QC) **and** quality assurance (QA) for the quality management of the Steelcase Flex Perch stool. [5]

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References:

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Figure 4: Photo courtesy of Steelcase.

Figure 5: Photo courtesy of Steelcase.

Figure 6: With permission from BASF Corporation.

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12EP11

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12EP12