

**Business management**

**Higher level**

**Paper 2**

1 hour 45 minutes

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**Instructions to candidates**

- Do not open this examination paper until instructed to do so.
- A clean copy of the **business management formulae sheet** is required for this examination paper.
- Section A: answer all questions.
- Section B: answer one question.
- Answers must be written within the answer boxes provided.
- A calculator is required for this examination paper.
- The maximum mark for this examination paper is **[50 marks]**

## Section A

Answer **all** questions in this section.

### 1. EcoHome Products Ltd. (EHP)

EcoHome Products Ltd. (EHP), founded in 2010, is a privately held company that manufactures eco-friendly home cleaning products. Since its founding in 2010, EHP has focused on creating non-toxic, biodegradable cleaning solutions that are safe for both the environment and households. EHP plans to launch two new products: EcoCleaner, a multi-surface cleaner, and EcoWipes, biodegradable cleaning wipes. EHP's management wants to use the contribution costing method to evaluate the profitability of these new products.

**Table 1: Selected financial information for EcoHome Products**

	<b>EcoCleaner</b>	<b>EcoWipes</b>
Sales Revenue	\$300,000	\$500,000
Direct Labor Costs	\$120,000	\$150,000
Direct Raw Material Costs	\$60,000	\$200,000
Fixed Costs (for both products)		\$60,000

(a) State **two** features of a privately held company.

[2]

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**(This question continues on the following page)**

**(Question 1 continued)**

(b) Using information from **Table 1**, calculate:

- (i) the total contribution of each product (*show all your working*); [2]

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- (ii) Based on the contribution costing method, determine if EHP will make a profit or loss from the two new products (*show all your working*). [4]

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- (c) Explain **one** disadvantage for EHP of using the contribution costing method [2]

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## 2. Smart Gadgets Ltd. (SG)

Smart Gadgets Ltd. (SG), founded in 2012, specializes in producing innovative electronic devices that are integrated into the growing Internet of Things (IoT) ecosystem. The company's primary products, Smart Watch and Smart Home, cater to the increasing demand for smart, connected devices. The Smart Watch offers advanced health monitoring and connectivity features, while the Smart Home system provides comprehensive home automation solutions. As SG continues to innovate in the IoT space, the company is evaluating the profitability of its products using various financial metrics and analyzing the impact of operating leverage to optimize its business operations.

**Table 2: Selected financial data and other information for the two products**

	Smart Watch	Smart Home
Sales Revenue	\$400,000	\$600,000
Direct Labor Costs	\$160,000	\$240,000
Direct Raw Material Costs	\$80,000	\$250,000
Fixed Costs (for both products)	\$80,000	
Units Produced	50,000	20,000
Defective Units	2,000	500
Number of employees (for both products)	200	

(a) Define the term *Internet of Things*.

[2]

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**(Question 2 continued)**

(b) Using information from **Table 2** calculate:

(i) the defect rate for Smart Watch (*show all your working*); [2]

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(ii) the labor productivity for both products together (*show all your working*); [2]

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(iii) the operating leverage for Smart Watch (*show all your working*). [2]

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(c) Explain **one** way for Smart Gadgets to increase labor productivity. [2]

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### 3. Eco Brewery Ltd. (EB)

Eco Brewery Ltd. (EB) is a medium-sized company that specializes in producing organic craft beers. Established in 2015, the company has gained a reputation for its high-quality products and sustainable business practices. The company operates its own brewery and sells its products to various retailers and directly to customers through its website. EB's management is keen to assess the company's operational efficiency to optimize its working capital and improve profitability.

**Table 3: Selected financial data for Eco Brewery (year ended 2023)**

<b>Sales Revenue:</b>	\$2,400,000
<b>Cost of Sales:</b>	\$1,500,000
<b>Expenses:</b>	\$600,000
<b>Average Stock:</b>	\$300,000
<b>Debtors:</b>	\$200,000
<b>Creditors:</b>	\$100,000
<b>Equity:</b>	\$800,000
<b>Non-current Liabilities:</b>	\$400,000

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**(Question 3 continued)**

(a) Define the term *working capital*. [2]

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(b) Using information from **Table 3** calculate:  
(i) the Stock Turnover (number of times) for EB (*no working required*); [1]

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(ii) the Debtor Days for EB (*no working required*); [1]

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(iii) the Creditor Days for EB (*no working required*); [1]

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**(Question 3 continued)**

(iv) the Gearing Ratio for EB (*no working required*); [1]

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(v) the Gross Profit for EB (*show all your working*) [2]

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(c) Explain **one** advantage of EB managing inventory turnover efficiently. [2]

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**Section B**

Answer **one** question from this section.

**4. Smile Bags Ltd.**

Smile Bags Ltd. (SB) is an emerging business specializing in eco-friendly packaging solutions. Founded in 2021 by Michael Harris, SB manufactures reusable and biodegradable bags designed to reduce plastic waste. The company is headquartered in Seattle, Washington, and operates with a mission to "Promote sustainability through innovative packaging solutions."

SB initially launched with a line of reusable shopping bags made from recycled materials. Due to the growing demand for sustainable products, the company has expanded its range to include biodegradable food packaging and eco-friendly gift wraps. In the past year, SB reported revenues of \$10 million, with a net profit of \$1.5 million. The company has 50 employees, including a production team, marketing specialists, and customer service representatives.

With the rapid growth of the company, SB is facing challenges related to managing its expanding workforce. The company needs to implement effective recruitment strategies and training programs to maintain operational efficiency and employee satisfaction.

(a) Define the term *recruitment* [2]

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SB has built a strong brand presence through social media campaigns and partnerships with environmental organizations. The company is considering launching a new line of customizable eco-friendly bags aimed at corporate clients. This strategic move is intended to tap into the corporate gifting market and expand its customer base.

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(Question 4 continued)

**Table 4: Employee Satisfaction Survey Results:** SB conducted an internal survey to assess employee satisfaction across several key areas. Below are the average satisfaction percentages for each factor:

Employee Satisfaction Factor	Satisfaction (%)
Internal Communication	68%
Leadership and Management	62%
Openness to Change	55%
Job Training and Development	60%

**Table 5: Projected Costs of Implementing TQM:**

TQM Implementation Costs	Cost Estimate (USD)
Employee Training (all staff)	\$50,000
Hiring Quality Control Experts	\$30,000
Purchasing Quality Monitoring Tools	\$20,000
Total Initial Investment	\$100,000

**Table 6: Projected Benefits of implementing TQM**

Projected Benefits from TQM	Expected Improvement
Decrease in Defective Items	30% reduction (currently 5% defect rate, expected to decrease to 3.5%)
Increase in Customer Satisfaction	15% increase (currently 80%, expected to rise to 92%)
Savings from Waste Reduction	\$25,000 annually
Increased Production Efficiency	10% improvement

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**5. AgroDrones Ltd.**

**AgroDrones Ltd. (AD)**, founded in 2015 by agronomist<sup>1</sup> Sarah Thompson, specializes in drone technology for precision agriculture, aiming to promote sustainable farming practices. Based in the Netherlands, AD's mission is "Innovating for a sustainable future in agriculture."

AD initially offered software solutions for crop health monitoring using data collected by drones. Over the years, AD expanded to manufacture high-quality drones equipped with advanced sensors and cameras, solidifying its position as a market leader in precision agriculture technology. The flagship product, AgroEye, combines drone hardware with proprietary software that uses artificial intelligence (AI) to analyze crop data and provide actionable insights to farmers. This technology helps farmers optimize resource use, increase yields, and reduce costs.

(a) Define the term *market leader*

[2]

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<sup>1</sup> Agronomist is an expert in the science of soil management and crop production.

**(Question 5 continued)**

- (b) Explain **one** advantage and **one** disadvantage of using artificial intelligence (AI) in AD's AgroEye product. [4]

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AD's financial situation is stable, but high R&D costs have strained cash flow. Recently, AD developed a new version of AgroEye offering improved battery life and enhanced data processing capabilities. However, technical issues have arisen, potentially delaying the product launch.

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**(Question 5 continued)**

Furthermore, competitors could benefit from waiting to see the results of AD's data mining efforts, allowing them to avoid mistakes and improve their own products and marketing strategies at a lower cost.

Implementing advanced data mining techniques requires investment in technology, data storage, and skilled personnel. Currently, AD has not skilled personnel in data mining. Below is an estimate of the benefits and costs for implementing data mining in AD:

**Table 7: Initial of Data mining implementation costs**

<b>Data Mining Implementation Costs</b>	<b>Cost (USD)</b>
Data Mining Software	140,000\$
Employee training	10,000\$
<b>Total initial investment</b>	<b>150,000\$</b>

**Table 8: Additional annual costs of implementing data mining**

<b>Annual costs</b>	<b>In USD</b>
Salaries of new employees	80,000\$
Cloud storage	20,000\$

**Table 9: Additional annual benefits of implementing data mining**

<b>Annual benefits</b>	<b>In USD</b>
Reduced Downtime and repairing costs	15,000\$
Increase in sales due to customers' data mining	120,000\$

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