Diploma Programme
Programme du diplôme
Programa del Diploma

Business management
Higher level
Paper 1

23 October 2023

Zone A afternoon | **Zone B** afternoon | **Zone C** afternoon

2 hours 15 minutes

Instructions to candidates

- Do not open this examination paper until instructed to do so.
- A clean copy of the **business management case study** is required for this examination paper.
- Read the case study carefully.
- A clean copy of the **business management formulae sheet** is required for this examination paper.
- Section A: answer two questions.
- Section B: answer question 4.
- Section C: answer question 5.
- A calculator is required for this examination paper.
- The maximum mark for this examination paper is **[60 marks]**.

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Section A

Answer **two** questions from this section.

1. (a) Outline **two** reasons why *BRD* may have chosen external growth rather than internal growth for its expansion (lines 27–28). [4]

(b) Explain how Arnold's relationship with *BRD*'s employees may have affected productivity at *BRD* (lines 58–72). [6]

2. (a) Outline **two** ways in which *BRD* could change its marketing mix when it switches to making model trains with plastic rather than metal in 2024 (lines 108–110). [4]

(b) Explain the likely impact on *BRD* of changing from batch production to cellular manufacturing (lines 41–56). [6]

3. (a) Outline **two** types of secondary market research that *BRD* could have used to identify the reasons for the decline in sales of model train sets and plastic model kits (lines 114–115). [4]

(b) Explain the likely impact on *BRD* of selling additional share capital to solve its liquidity problem (lines 124–141). [6]

Section B

Answer the following question.

4. *BRD* manufactures model train sets using just-in-case (JIC) stock control. Every December, sales of model train sets are usually equal to three months of production. *BRD* has 300 limited-edition train sets, made in 1999 to mark the turn of the millennium, in stock.

High-quality packaging is a feature of *BRD* train sets. *BRD* is considering buying packaging from *GXG* in Germany. In 2024, *BRD* plans to make 100 000 train sets. *BRD* will use the data in **Table 1** to make a decision about whether to continue to make its own packaging or buy packaging from *GXG*.

Table 1: Forecasted costs for *BRD* to make its own packaging or buy packaging from *GXG*

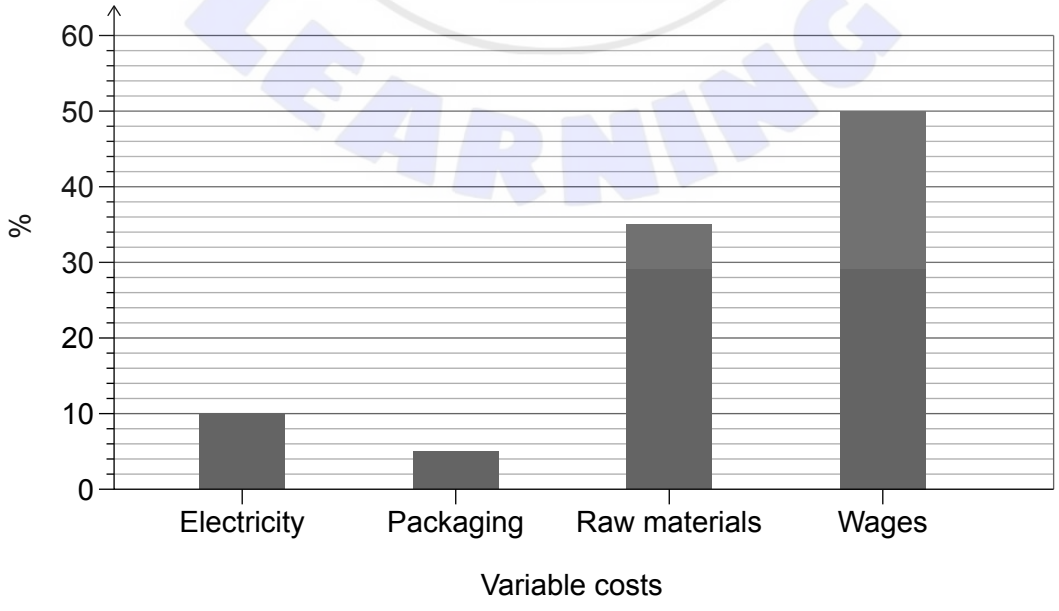
Make its own packaging	
Packaging unit variable cost	£0.55
Packaging total fixed costs	£5000

Buy packaging from *GXG*	
Order quantity	Unit price
0–75 000	£0.70
75 001–90 000	£0.66
90 001–105 000	£0.56
105 001+	£0.50

BRD uses a cost-plus (mark-up) pricing strategy for its *Matchfix* plastic model kits. Price increases of plastics and electricity have reduced profit margins.

In 2022, 180 000 *Matchfix* plastic model kits were made and sold at £80 each. Unit variable costs were £75, and total fixed costs were £800 000. The percentage share of unit variable costs per *Matchfix* plastic model kit is shown in **Figure 1**.

Figure 1: Percentage share of unit variable costs per *Matchfix* plastic model kit



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(Question 4 continued)

BRD's board of directors are considering **two** options to improve the profit margins of its *Matchfix* plastic model kits: installing solar panels on its factory roof to generate electricity or outsourcing the production of the *Matchfix* plastic model kits.

Option 1: Install solar panels on the factory roof to generate electricity
Costing £2 572 763, the installation would reduce *BRD*'s annual *Matchfix* production line net electricity bill by 75 %. Last year's bill was £1 350 000. *BRD* forecasts electricity prices to increase by 10 % per year until 2034. The forecasted savings are shown in **Table 2**.

Table 2: Forecasted net annual electricity savings from solar panel installation (all figures in £s)

Year 1	1 113 750
Year 2	1 225 125
Year 3	1 347 638
Year 4	1 482 401
Year 5	1 630 641

Option 2: Outsource the production of Matchfix plastic model kits
BRD is negotiating with *VKI*, a manufacturer in China, to produce and supply the plastic model kits for five years. In the first year, *VKI*'s price would be 25 % lower than *BRD*'s current production unit cost. Thereafter, the price would rise by 10 % each year.

(a) Define the term *cost-plus (mark-up) pricing*. [2]

(b) Explain **one** advantage **and one** disadvantage for *BRD* of using just-in-case (JIC) stock control for the manufacture of its model train sets. [4]

(c) (i) Calculate the difference between the cost for *BRD* to make its own packaging and the cost to buy the packaging from *GXG* (*show all your working*). [3]

(ii) Suggest **one** factor, **other than** cost, that *BRD* should consider before deciding whether to make its own packaging or buy packaging from *GXG*. [1]

(d) Using information from the case study and the additional information above, recommend whether *BRD* should choose **Option 1** (install solar panels) or **Option 2** (outsource production). [10]

Section C

Answer the following question.

5. It is now November 2023, and *BRD*'s board of directors did not approve the installation of solar panels nor the outsourcing of the production of the *Matchfix* plastic model kits.

4Change now owns 45 % of *BRD*'s shares and wants to make strategic changes.

BRD's board of directors are considering two strategic options: a location and product change, suggested by the *4Change* board members, or the repurposing of unused factory space for a visitor centre, suggested by other board members.

Option 1: A location and product change, suggested by the *4Change* board members

- Sell *BRD*'s Liverpool factory, which is valued at £28 million. *BRD* is valued at £24 million.
- Relocate to a factory nearby at an annual rent of £2 million and setup costs of £1.5 million.
- End the production of *BRD*'s model train sets. A retailer in India has offered £3 million to purchase *BRD*'s stocks of model train sets, valued at £10 million, along with the brand name, *BRD* Three-Rail Model Railway.
- Launch a new two-rail model train set with a new brand name, *BRD* 21st-Century Trains.

Option 2: Repurposing unused factory space for a visitor centre, suggested by other board members

- Two possibilities have been proposed for the visitor centre:
  - A railway museum showcasing full-sized railway engines and rail cars from the 20th century.
  - A science and imagination centre with interactive exhibits, allowing families to experiment with wind, magnets, electricity, and light. Highly trained employees would be needed to assist with experiments.

Table 3: Forecasted costs for the visitor centre

Setup costs	£900 000
Annual total variable costs	£100 000
Annual total fixed costs	£150 000

Total costs are forecasted to rise by 10 % each year.

The entrance fee to the visitor centre would be £15 per adult, with accompanied children entering for free.

Table 4: Forecasted numbers for paying visitor centre customers

Year	Paying visitor centre customers
1	40 000
2	50 000
3	55 000
4	59 000
5	63 000

(This question continues on the following page)

(Question 5 continued)

BRD's board of directors are divided. Arnold, who is in his final year as chief executive officer (CEO), has drawn up a force field analysis of both proposed options, shown in **Table 5**.

Table 5: Arnold's force field analysis

Option 1: Location and product change			
Driving forces		**Restraining forces**	
	Value		**Value**
Funds from sale of the factory	4	Relocation and setup costs	1
Relocation of offices and production	1	Increased costs (rent and setup costs)	4
Access to mass markets	2	Dilution of the *BRD* brand	2
Release of funds tied up in stocks	2	Stocks sold at below cost of production	3
Total	**9**	**Total**	**10**

Option 2: Repurposing unused factory space for a visitor centre			
Driving forces		**Restraining forces**	
	Value		**Value**
New revenue streams	3	Lack of experience with new venture	2
Increased diversification	2	Need to finance the development	3
Slot circuit will provide a unique selling point/proposition (USP)	3	Slot circuit growth potential	2
Predicted visitor numbers	2	Limited long-term growth	1
Total	**10**	**Total**	**8**

All figures are based on Arnold's personal opinions.

Using the case study and the additional information on pages 5 and 6, recommend whether *BRD* should choose **Option 1** (location and product change) or **Option 2** (repurpose unused factory space). [20]