Dublin Business School

QQI

BA (Hons) ACCOUNTING & FINANCE

SUMMER 2024 EXAMINATIONS

Module Code: **B8AF100**

Module Description: **Performance Management**

Examiner: **Mr James Browne**

Internal Moderator: **Norul Farida Abd Rahman**

External Examiner: **Shane Moran**

INSTRUCTIONS TO CANDIDATES

Time allowed is 3 hours
Answer Any 4 Questions out of 5 Questions
All questions carry 25 marks
Marks may be awarded for presentation & layout
Show ALL workings clearly

QUESTION 1

XITE LeisureCo is a company specialising in providing leisure activities for tourists to South Africa. The company offers two popular wild life experiences:

- **Swimming with Sharks** where guests are taken out to sea and get the opportunity to dive in a protective cage to join the sharks and
- **Walking with Lions** where guests travel into the bush and participate in guided walks with young lions.

The accountant is reviewing the costs related to these tourist experiences with a view to setting prices for the coming season. During last season, XITE ran 40 of the 8 hour duration shark tours, with an average of 15 guests, and 60 of the 4 hour duration lion tours, with an average of 20 guests. Refreshments are provided for each tour guest – 3 each on the Shark Tour and 1 each on the Lion Tour. Total costs amounted to €271,600. Current company policy is to base the selling price on the cost per tour plus 20% profit mark-up.

Before finalising these prices, the accountant has just attended a CPD refresher course on the topic of Activity-Based Costing (ABC). She is curious if using ABC would provide a more accurate estimate of the cost of the two types of tours. The following activities and their associated cost for last season have been identified:

ACTIVITY	ACTIVITY COST (€)	ACTIVITY DRIVER	QUANTITY OF ACTIVITY
Advertise tours	41,800	Number of tours	100
Insure guests	54,000	Number of guests	1,800
Tour Leaders (1 per tour)	44,800	Number of hours	560
Safety Rangers (3 per tour)	67,200	Number of hours	1,680
Transport	56,000	Number of hours	560
Educational handouts	1,800	Number of guests	1,800
Individual refreshments	6,000	Number of guest-refreshments	3,000
	271,600		

Required:

(a) Estimate the cost of a Shark Tour and a Lion Tour, using an 'average cost per hour' approach.

(4 marks)

(b) Estimate the cost of a Shark Tour and a Lion Tour, using activity-based costing principles.

(14 marks)

(c) Calculate the overall selling price to be quoted for each tour type, for next season, under both approaches.

(2 marks)

(d) Discuss which of the costs calculated in parts (a) and (b) provides a more reliable basis for cost plus pricing?

You must support your discussion with specific reference to the calculations and facts relating to XITE LeisureCo.

(5 marks)

(Total 25 marks)

QUESTION 2

PoshCo manufactures women's designer handbags. The handbags have to comply to strict requirements to satisfy wealthy customers. The manufacturing process uses expensive materials, skilled labour, and is rather complex. A new style of handbag has just been launched and will be manufactured in small batches. The following standard cost estimates have been made for the first batch, to be manufactured in month 1.

Standard costs for the batch:

300 labour hours @ €20 per hour	€6,000
60 units of direct materials @ €120 per unit	€7,200
Variable overhead 300 hours @ €15 per hour	€4,500
	€17,700

From experience, the firm knows that labour will benefit from a learning effect and labour times will be reduced. This is expected to approximate to an 80% learning curve. In addition, the growing expertise of labour is expected to improve the efficiency with which materials are used with a corresponding reduction in waste. The usage of materials is expected to approximate to a 95% learning curve.

The actual production for the first six months was as follows:

Month 1	20 batches
Month 2	25 batches
Month 3	24 batches
Month 4	28 batches
Month 5	30 batches
Month 6	33 batches

Total production so far to end Month 6 equals 160 batches

Fixed costs are period costs allocated to the designer handbags by head office at a rate per batch. The total allocated for the current year under review is €384,000 and the total number of batches will be pro-rata to the first six months.

Required:

(a) (i) Calculate the labour time (in hours) taken to produce the last batch in month 6 i.e. batch number 160.

(5 marks)

(ii) Calculate the material (in units) taken to produce the last batch in month 6 i.e. batch number 160.

(5 marks)

(iii) Derive an expected full cost for the last batch in month 6.

(8 marks)

Note: *the learning factor b for an 80% learning curve is* ***-0.321928****; the learning factor b for a 95% learning curve is* ***-0.074001***

(b) It is clear from the data provided that PoshCo has not yet reached "Steady State" in relation to learning curves on this new product. Explain the implications of this when considering future budgeting.

(3 marks)

(c) Discuss the features and circumstances which need to exist to ensure the appropriateness of the use of the learning curve model in PoshCo.

(4 marks)

(Total 25 marks)

QUESTION 3

SlushyCo produces and sells a range of healthy, natural fruit drinks. The products share some common mixing processes and ingredients. The company operates in a highly competitive market that faces frequent movements in market prices, and short-term operational challenges. The following information is available for the most recent trading period in relation to one of its popular drinks, known as The Manango which is a blend of banana and mango.

Standard ingredients for one large serving of The Manango:

Fruit	Amount in kg	Standard cost per kg (€)
Mango	2.25	1.95
Banana	0.75	1.25

During the accounting period actual production of The Manango was 25,000 drinks.

The actual ingredients used are as follows:

Fruit	Amount in kgs	Actual cost per kg (€)
Mango	52,500	1.90
Banana	21,500	1.40

Required:

(a) Calculate the price and usage variances for each of the ingredients separately and then in total.

(5 marks)

(b) Calculate the material mix and yield variance for The Mananago for the period.

(10 marks)

(c) Explain how the variances calculated in (a) and (b) above can help provide more useful management information.

(4 marks)

(d) Some experts have commented that Standard Costing is no longer suitable in a modern manufacturing operation. Discuss, with reasons, whether you agree or disagree with this comment.

(6 marks)

(Total 25 marks)

QUESTION 4

InkyCo manufacture ink cartridges for the home printer market and has spent the last two years developing a new sustainable ink cartridge incurring development costs of €24 million. They are now about to launch the product on the market and expect the life cycle to last for three years before the level of competition will make it unprofitable and the product will be withdrawn.

The directors are trying to establish a price point to launch the eco-friendly product but cannot agree on a selling price.

- The **marketing director** is keen to set a low price claiming that this will result in rapid sales growth to achieve optimum market penetration and discourage competitors from entering the market. She has suggested a technique known as Lifecycle Costing to establish the unit cost which is then subject to a **mark-up** of 40% to arrive at a selling price.

- The **finance director** disagrees saying a high price is needed and that it should be based on data for Year 1 only as later years' data are less reliable. The selling price should be based on a **margin** of 40% and recover the high development costs which will be amortised evenly over the product life along with the ongoing costs of production and marketing.

The following details have been summarised for the next board meeting:

	Year 1	Year 2	Year 3
	€	€	€
Direct material cost per unit	6	7	9
Direct labour cost per unit	4	4	5
Product specific fixed costs (in total)	3 million	3 million	3 million
Marketing spending (in total)	7 million	4 million	1 million
Expected production and sales demand (units)	8 million	15 million	9 million

Required:

(a) Calculate the cost per unit and resulting selling price based on the proposal of the finance director.

(7 marks)

(b) Calculate the cost per unit and resulting selling price based on the proposal of the marketing director.

(12 marks)

(c) Comment on both proposals using the information in the question and also the calculations you have performed.

(6 marks)

(Total 25 marks)

QUESTION 5

MinoCo is considering the introduction of one new product to its existing range. The product design team has come up with two options and have provided the following forecast information:

Product 1 – Kye		
Sales price	€99 per unit	
Direct material cost	€30 per unit	
Direct labour cost	€20 per unit	
Variable overhead	€14 per unit	
Budgeted annual sales		60,000 units
Fixed costs (specifically associated with the product)		€1,400,000 per annum

Product 2 – Lee		
Sales price	€59 per unit	
Direct material cost	€15 per unit	
Direct labour cost	€10 per unit	
Variable overhead	€8 per unit	
Budgeted annual sales		60,000 units
Fixed costs (specifically associated with the product)		€520,000 per annum

MinoCo **does not** have the capacity to produce both products.

Required

(a) Explain the principles underlying Cost Volume Profit (CVP) analysis as a decision making technique.

(4 marks)

(b) For **each** product, calculate the following:

(i) Annual forecast profit/loss.

(4 marks)

(ii) Contribution/sales ratio.

(2 marks)

(iii) Break-even point in units.

(4 marks)

(iv) Margin of Safety (as a %)

(2 marks)

(v) The level of sales required to produce a profit of €1,000,000 to pay back the original investment.

(4 marks)

(c) Using the calculations in part (b) to support your discussion, advise MinoCo on which product it should introduce and comment on any additional information which might be desirable.

(5 marks)

(Total 25 marks)

END OF EXAMINATION

Formulae Sheet

Learning Curve

$$Y = ax^b$$

Where Y = average cost per batch
a = cost of the first batch
x = total number of batches produced
b = learning factor (log of LR/log 2)
LR = the learning rate as a decimal

Price / Demand Curve

$$P = a - bQ$$

Where

$$b = \frac{\text{change in price}}{\text{change in quantity}}$$

a = price when Q = 0

$$MR = a - 2bQ$$