Dublin Business School

QQI

BA (HONS) ACCOUNTING & FINANCE

SUMMER 2024 EXAMINATIONS

Module Code: **B7AF107**

Module Description: **Cost Accounting**

Examiner: **Paul Walsh**

Internal Moderator: **Nor Hadza Nor Yadzid**

External Examiner: **Shane Moran**

INSTRUCTIONS TO CANDIDATES

Time allowed is 3 hours
Answer Question 1 (Compulsory) and any other 3 Questions
All questions carry 25 marks

Question 1 – COMPULSORY

You have been asked to review production and cost data in a plant in your organisation and you got the following data from production runs over the past five months:

	Dec	*Jan*	*Feb*	*Mar*	*Apr*
Volume	16,850	22,000	33,750	41,850	38,850
Total Costs	€556,050	€684,800	€978,550	€1,181,050	€1,106,050
Total Revenue	€1,432,250	€1,870,000	€2,868,750	€3,557,250	€3,302,250

The company uses an absorption costing system and the composition of variable costs in percentage terms for each item is:

Direct Materials	40%
Direct Labour	30%
Variable Overhead	30%
	100%

Required:

a) Using the "High-Low" technique, calculate the variable costs and the fixed cost of production.

(6 marks)

b) Calculate the cost per unit of:
   (i) Direct Materials
   (ii) Direct Labour
   (iii) Variable Overhead

(5 marks)

c) If the Direct Labour cost represents 12 minutes effort, what is the hourly labour rate?

(2 marks)

d) What is the selling price of this product?

(2 marks)

e) What is the total cost per unit when 20,000 units are produced?

(2 marks)

f) What is the profit when 20,000 units are sold?

(2 marks)

g) What is the monthly break-even quantity for this product?

(2 marks)

h) What quantity of this product must you sell to generate a monthly profit of €900,000?

(2 marks)

i) If the selling price is reduced to €71, to stimulate demand, what is the new break-even quantity?

(2 marks)

(Total 25 marks)

Question 2

Wonderland Ltd manufactures two types of Gym treadmill: the Entry and the Luxury. Each product requires the incorporation of a difficult-to-handle special part (one of them for an Entry and four for a Luxury). Both of these products are made in batches (large batches for Entry's and small batches for Luxury's). Each new batch requires that the production facilities are 'set up'.

Details of the two products are:

	Entry	***Luxury***
Annual production and sales – units	24,000	13,000
Sales price per unit	€153	€235
Manufacturing batch size – units	2,000	25
Direct labour time per unit	1 hour	2 hours
Direct labour rate per hour	€12	€12
Direct material cost per unit	€52	€86
Number of special parts per unit	1	5
Number of set-ups per batch	1	3
Number of separate material issues from stores per batch	1	1
Number of sales invoices issued per year	80	480

An analysis of overhead costs for DBS Ltd has provided the following information:

Overheads	***€***	***Driver***
Set-up cost	265,680	Number of set-ups
Special part handling cost	152,000	Number of special parts
Customer invoicing cost	72,000	Number of invoices
Material handling cost	188,320	Number of batches
Other overheads	272,000	Labour hours
	950,000	

Required:

a) Calculate the profit for Entry and Luxury driver aids using the traditional direct-labour-hour-based absorption of overheads

(10 marks)

b) Calculate the profit for Entry and Luxury driver aids using the activity-based costing methods.

(15 marks)

(Total 25 marks)

Question 3

Hong Kong Budget Tiles make Ceiling tiles. At the start of 2023, the company expected to make and sell 105,000 Ceiling tiles in the year. Each tile was expected to sell for €120.

Each tile has the following specifications:

	Per Tile	Rate
Direct Materials	2.25 kg	€16 per kg
Direct Labour	48 mins	€21 per hour

Variable overhead was budgeted to be €1,150,000.

The following information relates to the 12 months ending 31st of December 2023, the end of the year under review. All tiles sold in the year were produced in the year. Tile sales volumes was 125,000 tiles. The sales price for each tile was 15% greater than budget.

The company used 2.4 kg of direct materials in the manufacture of each tile. The total cost of direct materials was €4,200,000. Variable Overhead was €1,200,000 in the year. The company actually used 87,500 hours of direct labour at a total cost of €1,750,000.

Required:

a) Calculate the budgeted contribution
(2 marks)

b) Calculate the actual contribution
(3 marks)

c) Calculate the following variances:

(i) Materials Price
(2 marks)

(ii) Materials Usage
(2 marks)

(iii) Labour Rate
(2 marks)

(iv) Labour Efficiency
(2 marks)

(v) Variable Overhead Expenditure Variance
(2 marks)

(vi) Variable Overhead Efficiency Variance
(2 marks)

(vii) Sales Margin Price Variance
(2 marks)

(viii) Sales Margin Volume Variance
(2 marks)

d) Reconcile the actual and budgeted contribution

(4 marks)

(Total 25 marks)

Question 4

The following data were taken from the records of the Dubai Spring Water Company:

	January (litres)	**February (litres)**	**March (litres)**
Production	14,000	14,500	8,500
Sales	12,500	15,500	10,500
Opening Inventory	0	1,500	2,000

The following standard data are based on a normal monthly level of activity of 12,000 litres of water:

Direct Material	€3.00
Direct Labour	€2.00
Production Overhead	€4.00
	€9.00

The selling price of the water is €20.00 per litre. Administrative costs are fixed at €20,000 per month and 50% of the production overheads are fixed.

Required:

a) Prepare operating statements based on:

(i) Marginal costing principles

(10 marks)

(ii) Absorption costing principles

(10 marks)

b) Comment on the differences between absorption and marginal costing.

(5 marks)

(Total 25 marks)

Question 5

A. You are a financial analyst at Sunrise Electronics, a company specializing in manufacturing smart home devices. The company is planning to launch a new smart home hub in the upcoming financial year. The initial market research indicates a strong demand for the product, but significant upfront investments in research, development, and marketing are required. Your CFO has asked you to prepare a comprehensive budget for this project, considering the following:

1. Initial investment in research and development (R&D) is estimated at €2 million.
2. Marketing and launch expenses are projected to be €1.5 million.
3. The production cost is estimated at €200 per unit.
4. The expected selling price per unit is €500.
5. The sales volume is forecasted to be 20,000 units in the first year.
6. The company aims for a minimum return on investment (ROI) of 20% on this project.

Question:

A. Develop an outline budget for the new smart home hub project.

Your budget should include:

1. A cost-benefit analysis

(5 Marks)

2. A break-even analysis

(5 Marks)

3. A return on investment (ROI) calculation.
(5 Marks)

B. Recommend strategies for managing potential budget variances and risk factors associated with the project.
(10 Marks)

(Total 25 Marks)

Standard Costing Variance Formula	
Material Price	aq(sp-ap)
Material Usage	sp(sq-aq)
Labour Rate	ah(sr-ar)
Labour Efficiency	sr(sh-ah)
V o/h rate	ah(sr-ar)
V o/h efficiency	sr(sh-ah)
Fixed Overhead	bud fixed o/h-act fixed o/h
sales price	(ap-sp)Act sales
Sales volume	(Act vol-Std vol)Bud contri