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TECHNOLOGICAL UNIVERSITY DUBLIN
BOLTON STREET CAMPUS

**BACHELOR OF SCIENCE (HONOURS) IN TRANSPORT
OPERATIONS AND TECHNOLOGY**

FOURTH YEAR: SEMESTER 2 – MAY 2023

MANAGEMENT 4 (FINANCIAL MANAGEMENT)

Internal Examiner(s):

Dr. Conor Norton, PhD, BA (Hons), MRUP, MSC (Urban Design), MRPTI, MIPI
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Brendan Meehan, B.Comm, FCCA, AITI

External Examiner(s)

Jarlath Sweeney – Group Editor Fleet Publications
Prof. Washington Yotto Ochieng - BSc, MSc, PhD, FEng, CEng, FICE, FRIN, FInstCES, FCIHT

{ date and time }

Answer any three questions.

All questions carry equal marks.

Time Allowed: 2 hours

QUESTION 1.

Radius Components Limited manufactures a standard component for supply to the motor services sector. The selling price is €80 per unit. The variable cost of manufacture is €40 per unit and monthly fixed costs are €48,000 per month.

a) Represent the above data on a Breakeven Chart showing clearly the breakeven output (7 marks)

b) Using the data set out above, compute the output necessary to:

i) earn a profit of €240,000 (4 marks)

ii) to incur a loss of €8,000. (4 marks)

c) The Directors have been advised that a serious upgrade in manufacturing equipment may be required. This will involve incurring additional fixed costs of €40,000 per month in additional leasing charges. Compute the revised breakeven output should this arise. (4 marks).

c) Explain the term “Contribution” (6 marks)

TOTAL 25 MARKS

QUESTION 2.

PART A:

Give six of the principle objectives of Budgetary Control. (10 marks)

PART B:

Right Size Fabrications Limited manufactures a standard product. Each unit of product has a raw material cost of €40.00.

Expected production for the next four months of activity is:

June 2023	24,000 units
July 2023	30,000 units
August 2023	22,000 units
September 2023	28,000 units

On 1st of June, it is anticipated that stock levels of Raw Material will be €290,000 at cost. It is the company's inventory policy to have 30% of the raw material required for production in any month in stock at start of that month.

Prepare a Raw Material Purchases Budget for the quarter ended 31st August 2023. (15 marks)

TOTAL 25 MARKS.

QUESTION 3:

PART A:

Mick Kenny is the manager of a Motor Services Department. There are two other departments in the business - Vehicle Sales and Parts Sales. The three departments share the following annual costs:

Insurances	€9,000
Rent	€36,000
Rates	€3,000
Administration	€24,000

It has been agreed that these costs should be apportioned to the individual departments on a floor area basis. The Motor Services Department occupies 40% of the total floor area of the business.

Other annual costs that are specific to the Motor Services Department are:

Mr. Kenny's Salary	€40,000
Light & Heat	3,200
Parts and Spares	30,000
Advertising	2,000

There are four mechanics employed who each work a 39 hour week. They are entitled to 4 weeks holidays and 10 bank holidays every year. They are each paid €30,000 per annum.

The profit required from the Motor Services Department is 20% of all costs, both assigned and specific, and the department charges out its work at €52 per hour.

Mr Kenny has asked you to determine the required minimum efficiency of the Motor Services Department . (20 marks).

PART B:

Explain the term "General Overheads" in the context of a multi departmental business referring to methods of applying overheads to user departments. (5 marks)

TOTAL 25 MARKS

QUESTION 4:

Answer all of the following parts:

- A. What are the main elements of a good system of credit control? (8 marks)
- B. Distinguish, giving examples, between fixed costs and variable costs.(6 marks)
- C. What are the “4 P’s” that comprise the Marketing Mix? (6 marks)
- D. What do you understand by the term “Workshop Efficiency”? (5 marks)

TOTAL 25 MARKS.

QUESTION 5.

PART A:

Explain the term “Gross Margin” and set out its importance as a key economic statistic for trading businesses. (10 marks)

PART B:

A successful agency business is listed for sale. The guide price for the business is €350,000. Paul Smith is interested in acquiring the business and intends to borrow the full €350,000 required. He has been given loan approval and the repayments over 10 years at 7% will be €4,000 per month.

The estate agent has indicated that the turnover of the business, in the most recent year of trading, was €720,000.

The following information on annual costs has been determined:

Light and Heat	€7,200
Telephone and postage	2,200
Printing & Stationery	2,600
Insurances	7,000
Wages (2 persons)	76,000
Repairs & Maintenance	2,000
Rent & Rates	60,000
Total projected overhead	<u>€157,000</u>

The Gross Margin from this sector is 40%.

It is considered that John requires an income of €60,000 per annum to maintain his lifestyle.

Determine for John whether or not he should go ahead with the purchase of this business.

(15 Marks)

TOTAL 25 MARKS.

QUESTION 6.

George and Robert Robinson each hold 50% of the capital of Robinson Supplies Limited. The capital consists of 1000 Ordinary Shares of €1.00 each. George has decided to retire from the company and is prepared to offer his 500 shares to Robert for €800,000 (making the total value of the company to be worth €1.6 million).

Robert has asked you to advise him whether this offer is acceptable. To this end, he provides you with the most recent annual results:

PROFIT AND LOSS ACCOUNT

Profit before interest and tax	320,000
Interest	<u>20,000</u>
Profit before tax	300,000
Taxation	<u>40,000</u>
Profit after tax	<u>260,000</u>

BALANCE SHEET

Property & non business assets	400,000
Stocks	60,000
Trade Debtors	50,000
Bank and Cash Balances	<u>260,000</u>
	<u>770,000</u>
Ordinary Shares (€1.00 each)	1000
Retained Profits	429,000
Property Loans	180,000
Trade Creditors	<u>160,000</u>
	<u>770,000</u>

A typical “price earnings” ratio of a publicly quoted company in this sector is 5.2.

- a. Calculate the:
 - Gearing Ratio (3 marks)
 - Return on Capital Employed (3 marks)
 - Interest Cover (3 marks)
 - Earnings per share (3 marks).

- b. Calculate the value of the company and determine whether the offer of €800,000 for George’s 50% interest in the company should be accepted by Robert. (13 marks)

TOTAL 25 MARKS.

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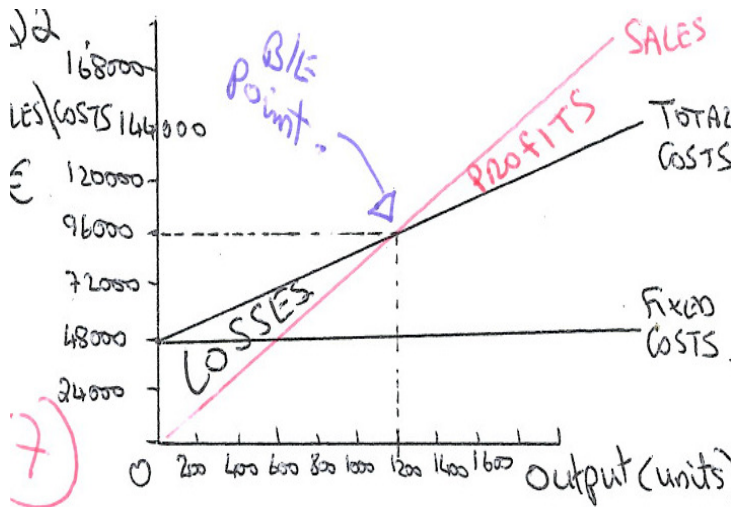
FOURTH YEAR: SEMESTER 2 – MAY 2023

MANAGEMENT 4 (FINANCIAL MANAGEMENT)

OUTLINE SOLUTIONS

QUESTION 1: BREAKEVEN ANALYSIS:

a. Breakeven Chart: B/E point – output 1200 units, Sales €9600.



7 marks

b. (i) Formula:

$$Q = \frac{FC + P}{S - V}$$

Set P = €240000

$$Q = \frac{48000 + 240000}{80 - 40}$$

$$Q = \frac{288000}{40}$$

$$Q = 7200 \text{ units}$$

4 marks

(ii) Formula:

$$Q = \frac{FC + P}{S - V}$$

Set P = -€8,000

$$Q = \frac{48000 - 8000}{80 - 40}$$

$$Q = \frac{40000}{40}$$

$$Q = 1000 \text{ units}$$

4 marks

c. Formula

$$Q = \frac{FC + P}{S - V}$$

Set FC = €88000; P = 0

$$Q = \frac{88000 + 0}{80 - 40}$$

$$Q = \frac{88000}{40}$$

$$Q = 2200 \text{ units}$$

5 marks

d. Contribution: is the amount of fixed costs recovered by producing and selling one unit of output. It is the difference between selling price and unit variable cost.

5 marks

QUESTION 2 BUDGETARY CONTROL

A: OBJECTIVES OF BUDGETARY CONTROL:

- to plan and control income and expenditure
- to direct capital expenditure in most profitable direction
- to provide a yardstick against which actual results are compared
- to determine the impact on the budget when unforeseen events occur
- to motivate staff by setting achievable targets.
- to identify adverse trends and make corrections (“management by exception” principle). (10 Marks)

B. MATERIAL PURCHASES BUDGET

Month	June	July	August	September
Material Cost of Production	960,000	1,200,000	880,00	1,120,000
Less opening Stock	-290,000	-360,000	-264,000	
	670,000	840,000	616,000	
add Target ending stock	360,000	264,000	336,000	TOTAL
Required Production	1,030,000	1,104,000	952,000	3,086,000

15 Marks

QUESTION 3: WORKSHOP EFFICIENCY COMPUTATION / MEASUREMENT

Part A:

ASSIGNED GENERAL OVERHEAD:

Insurances	9000 x 40% =	3600
Rent	36000 x 40% =	14400
Rates	3000 x 40% =	1200
Administration	24000 x 40% =	9600

SPECIFIC WORKSHOP COSTS

Manager's Salary	40000
Light & Heat	3200
Parts & Spares	30000
Advertising	2000
Mechanics' Wages 4 @ 30000 =	<u>120000</u>

TOTAL WORKSHOP COSTS	224000
REQUIRED PROFIT AT 20%	<u>44800</u>
REQUIRED WORKSHOP SALES	<u>268800</u>

- Required no. of chargeable labour hours = $268800 / €52 = 5169$ hours
- No. of labour hours available = $4 \text{ mechanics} \times 39 \text{ hours} \times [52 - 4 - 2] \text{ weeks} = 7176$ hours
- Required workshop efficiency = $(5169 / 7176) \times 100 = 72\%$ (rounded).

20 marks

Part B: General Overheads:

These are overheads that are incurred on behalf of the whole of the enterprise and are not directly traceable to any single department or profit centre. They are therefore not avoided by closing down the operations of a department or sub unit.

It is normal to apportion these overheads on a predetermined basis to the user departments on a reasonable and fair manner e.g. as % of floor area occupied or as % of employees engaged.

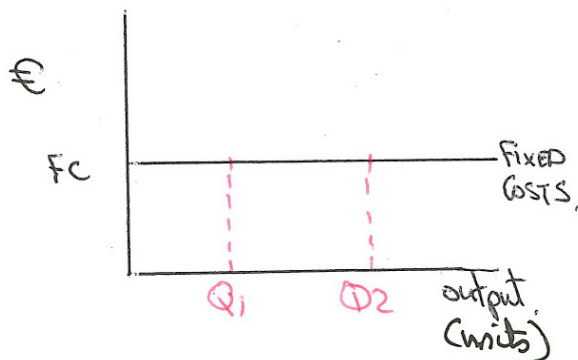
5 marks

QUESTION 4:

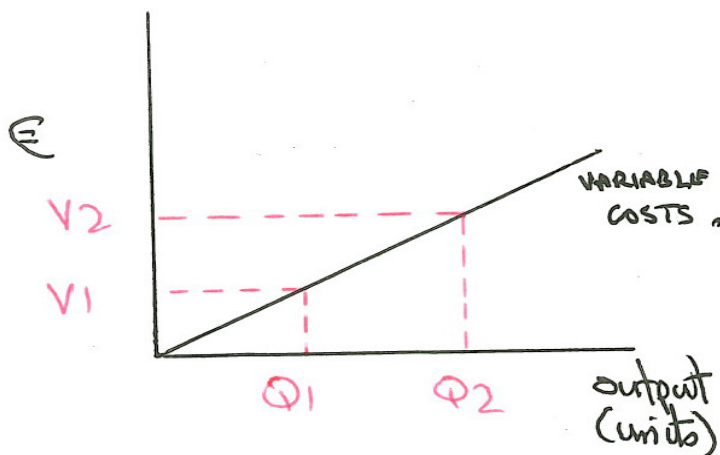
a) Features of Credit Control to include:

- Good documentation flow over each stage of a sales transactions to avoid disputes with customers
- Formal assessment of potential customers for credit worthiness by means of credit rating agency report, review of most recent accounts filed in Companies Office, provide trade references.
- Maintenance of a timely and reliable Sales Ledger system.
- Regular review of age listing of balances for correctness and identification of non compliance with credit terms.
- Revise regularly credit terms and limits based on customer performance.
- Review of accounts for consistency in Debtors Days and Bad Debts % ratios as means of benchmarking performance of credit control department. (8 marks)

b) **FIXED COSTS:** are costs which tend not to be affected by variations in the level of output. Known as "period Costs". Examples are monthly lease payments, annual insurances, annual rates, quarterly rents. When graphed:



VARIABLE COSTS: are costs that directly vary with fluctuations in the level of output. Examples include materials, distribution, packaging etc. When graphed:



- c. **MARKETING MIX** – elements are known as the “4 P’s” of Marketing: Product Demand – Pricing Policy – Promotion Methods – Place of Consumption (brief description of each giving examples). (6 marks)
- c. **WORKSHOP EFFICIENCY**: a measure of the extent to which labour hours employed in a workshop are billed out on jobs to customers. Typically, this computes at around 70% which means that for every 100 hours of time worked by employees, 70 is traceable and billable to jobs. (5 marks)

QUESTION 5: BUSINESS PURCHASE DECISION:

PART A: GROSS MARGIN: for trading companies, profit is arrived at in 2 stages. First stage is to determine the Gross or Trading Profit. When Gross Profit is expressed as a % of sales, this figure is known as “Gross Margin”. This can then be compared with previous years or with known industry norms. Any deviation should be investigated and explained.

Known margins in key sectors are:

- Motor Factors 50% - 60%
- Forecourt Sales (fuels) 5%
- Freight Forwarding 15%
- Travel Agency 10% to 12%

Competitive factors can cause a decline in gross margin. But also, a decline that is not expected can be due to theft or other defalcations due to poor controls especially over custody of stocks and recording of sales in a cash business. (10 marks)

PART B: DECISION:

DETERMINE GROSS MARGIN NECESSARY FROM CONDUCT OF THE BUSINESS:

ANNUAL COSTS TO RECOVER:

Light & Heat	7200
Telephone and Postage	2200
Printing Stationery	2600
Insurances	7000
Wages (2 persons)	76000
Repairs & Maintenance	2000
Rent and Rates	60000
TOTAL	157000

LOAN COMMITMENTS PER ANNUM

12 payments @ €4000 per month = **€48000**

REQUIRED PERSONAL INCOME PER ANNUM **€60000**

TOTAL GROSS MARGIN REQUIRED = 157000 + 48000 + 60000 =	265000
GROSS MARGIN FOR THE SECTOR	40%
REQUIRED ANNUAL SALES = 265000 / .40 =	662500
SALES CERTIFIED BY ESTATE AGENT	720000

As the certified sales exceed the required sales, then Paul should proceed to purchase the business.

QUESTION 6 – VALUATION OF AN UNQUOTED / PRIVATE LIMITED COMPANY

a. COMPUTATION OF RATIOS:

FORMULA	COMPUTATION
Gearing Ratio: (debt / debt + equity) x100	$(180000 / 610000) \times 100 = 29.5\%$
ROCE: (PBIT / debt + equity) x 100	$(300000 / 610000) \times 100 = 49\%$
Interest cover: (PBIT / Interest) = times	$320000 / 20000 = 16 \text{ times}$
Earnings Per Share: (Profit after tax / no. of shares)	$260000 / 1000 = \text{€}260 \text{ per share}$

(12 marks)

b. VALUATION OF COMPANY:

VALUE OF THE TRADE / BUSINESS:	
EPS x Price/Earnings x No. Shares in issue	
$\text{€}260 \times 5.2 \times 1000 \text{ shares} =$	1,352,000
NON TRADE ASSETS	
Property etc	400,000
Less loans on property	<u>-180,000</u>
Equity	220,000
+ Undistributed Bank and Cash	<u>260,000</u>
Value of non trade assets	<u>480,000</u>
TOTAL VALUE OF COMPANY	<u>1,832,000</u>
VALUE OF 50% INTEREST $1,832,000 \times 50\% =$	916,000

As the value of the shares well exceeds the offer price of €800,000, Robert should accept George's offer to purchases his shares.

(13 marks)