

EASTERN UNIVERSITY, SRI LANKA
FACULTY OF COMMERCE AND MANAGEMENT

THIRD YEAR - SECOND SEMESTER EXAMINATION IN BACHELOR OF COMMERCE
HONOURS IN ACCOUNTING AND FINANCE 2021/ 2022 (AUGUST/ SEPTEMBER 2024)
(PROPER/ REPEAT)

DAF 3113 STRATEGIC MANAGEMENT ACCOUNTING

Answer all questions

Time: 03 Hours

Calculator is permitted

01 i. Use the Simplex method to solve the following Linear Programming problem.

$$\text{Max } 7X_1 + 6X_2$$

$$\text{Subject to; } 2X_1 + 4X_2 \leq 16$$

$$3X_1 + 2X_2 \leq 12$$

$$X_1, X_2 \geq 0$$

(12 Marks)

ii. A small furniture manufacturer produces tables and chairs using three key machines: Machine A, Machine B, and Machine C.

- Machine A and Machine B can each be operated for at most 12 hours per day.
- Machine C must be operated for at least 5 hours per day.

The time required to produce one unit of each product using the machines is as follows:

Product	Machine A	Machine B	Machine C
Tables	1	2	1
Chairs	2	1	1.25

The manufacturer earns a profit of Rs.600 from each table and Rs.400 from each chair.

You are required to:

- A. Formulate the system of inequalities that represents the time constraints for each machine.

- B. Graph these inequalities to visualize the feasible region.
- C. Determine the number of tables and chairs that the manufacturer should produce each day to maximize profit. What is the maximum profit of the production?

(08 Marks)

(Total 20 Marks)

- 02 i. Assume that you are the new logistics manager for a multinational company that needs to optimize the transportation of goods from three production sites (S1, S2, and S3) to four distribution centers (D1, D2, D3, and D4). The transportation costs per unit from each source to each destination and the supply and demand at each location are given in the table below:

SID	D1	D2	D3	D4	Supply
S1	50	75	30	45	1200
S2	65	80	40	60	1700
S3	40	70	50	55	1100
Demand	1000	1000	1000	1000	

You are required to:

- A. Find the optimal solution using the MODI method. Use the northwest corner method to get the initial feasible solution.
- B. Identify one potential real-world constraint that might affect the transportation plan and suggest a strategy to handle this uncertainty.

(14 Marks)

- ii. A leading consumer goods company in Sri Lanka, "Lanka Goods Ltd.", is planning to assign four innovative marketing strategies to three of its product lines to boost their sales performance. The marketing director has estimated the potential increase in sales performance due to the assignment of these strategies, as shown in the table below. Only one strategy can be assigned to each product line.

		Increase in sales (units)		
		PL1	PL2	PL3
Strategy	S1	100	70	80
	S2	80	90	70
	S3	70	120	60
	S4	100	100	80

You are required to:

Determine the optimal assignment of marketing strategies to each product line.

(06 Marks)

(Total 20 Marks)

- 03 i. Serendib Garments Ltd., a leading garment manufacturer in Sri Lanka, is looking to improve its management control systems by implementing responsibility accounting. The company aims to enhance accountability and performance measurement across different departments. They plan to categorize departments as cost centers, profit centers, or investment centers, and implement relevant performance measures. The management of Serendib Garments Ltd. has decided to start with the Production and Sales departments. The Production department will be treated as a cost center, and the Sales department as a profit center. The company wants to ensure that each department's performance is accurately measured and managed.

You are required to:

Answer the following questions related to implementation of responsibility accounting at Serendib Garments Ltd, based on the provided information.

- A. Define what is meant by a cost center and a profit center. Why is it beneficial for Serendib Garments Ltd. to categorize the Production department as a cost center and the Sales department as a profit center?
- B. Identify one key performance measure for the Production department (cost center) and one for the Sales department (profit center). How can these measures help to improve the performance and accountability of each department?

(10 Marks)

- ii. TechGears Inc. is a top electrical corporation with a decentralized organizational structure. Mainly, it has two divisions: TechAssemble, which produces circuit boards, and TechBuild, which uses these boards to create smartwatches. TechAssemble sells the circuit boards to TechBuild at a transfer price and also sells them to external clients.

TechBuild has noticed that the transfer price for the circuit boards from TechAssemble is higher than the price that TechBuild can obtain from external suppliers. This has led to higher production costs for TechBuild and reduced profitability for their smartwatches.

You are required to explain:

- A. How can TechGears Inc. adjust the transfer pricing to make it more equitable and competitive for TechBuild?
- B. What steps can TechGears Inc. take to resolve the pricing conflict between TechAssemble and TechBuild?

(10 Marks)

(Total 20 Marks)

- 04 i.** LuxeCraft Industries, a high-end furniture manufacturer, is planning to expand its product line and enter new markets. To fund this expansion, the company needs to manage its working capital effectively, given that its operations are characterized by both stable and fluctuating demands.

LuxeCraft Industries has identified the following financial needs:

- Permanent Working Capital: To support ongoing operations such as raw material procurement, maintaining inventory, and covering employee wages.
- Variable Working Capital: To accommodate increased production during peak seasons and to invest in new market expansion.

The company is evaluating different financing strategies and has access to various funding options.

- Long-term Sources: Issuing equity and obtaining long-term loans.
- Short-term Sources: Utilizing trade credit, and bank overdrafts.

LuxeCraft Industries is deliberating on the best approach to finance its working capital.

You are required to:

Answer the following questions based on the above provided information.

- A. Considering its need for both stable and flexible funding, which financing approach would be most appropriate for the company? Justify your choice by evaluating how the approach aligns with LuxeCraft's permanent and variable working capital needs and overall business strategy.
- B. Calculate the Operating Cycle of LuxeCraft Industries using the below information.

Item	Beginning Balance (Rs)	Ending Balance (Rs)
Inventory	2,300,000	3,500,000
Accounts Receivable	1,750,000	2,300,000
Accounts Payable	700,000	900,000
Net Sales	Rs.13,000,000	
Cost of Goods Sold	Rs. 8,500,000	

- C. Prepare the estimation of working capital requirements of the LuxeCraft Industries using the following information.

Project Annual Sales	100,000 units
Selling Price	Rs. 8 per unit
Percentage of net profit on sales	25%
Average credit period allowed by suppliers	4 weeks
The average credit period allowed for debtors	8 weeks
Average stock holding in terms of sales requirement	12 weeks
Allow for contingencies	10%

(12 Marks)

- ii. Assume you are managing a project to set up a new branch office for your company. The project involves several key activities, each with estimated completion times. The activities are as follows:

- Activity 1-2: Select the office location and sign the lease (13 days)
- Activity 1-3: Plan the office layout and interior design (12 days)
- Activity 2-4: Order and install office furniture and equipment (2 days)

- Activity 3-4: Set up the IT infrastructure, including network and computers (8 days)
- Activity 2-5: Recruit and train staff (15 days)
- Activity 4-5: Final office inspection and approval (2 days)

You are required to:

- A. Create a network diagram that visually represents the sequence and dependencies of these activities when setting up the new branch office.
- B. Identify the critical path activities and the expected project completion time.
- C. Calculate the total float for each activity in the project, which is the amount of time the activity can be delayed without delaying the overall project completion.

(08 Marks)

(Total 20 Marks)

- 05 i.** Movefirst is a profitable international pharmaceutical company that develops, produces and markets drugs that are licensed as medication. The pharmaceutical industry has grown rapidly and faces challenges in preventing and controlling environmental pollution. Over the past few years, there has been growing pressure on the industry from government, shareholders and other stakeholders to improve its environmental management performance. Movefirst has taken a proactive approach to environmental management and has invested significant resources introducing pollution prevention and clean manufacturing practices into its operation in order to reduce waste and minimize negative environmental impacts. The company has used marketing and advertising campaigns to develop an image as a company that is at the cutting edge of 'green' technology. As part of its environmental management programme, Movefirst is considering investing in a new system that will significantly reduce hazardous emissions and waste.

The estimates for the proposed investment are as follows:

Initial investment	60 million
Useful life	6 years
Residual value	12 million
Annual income from sale of recycled waste	5 million
Annual savings in waste disposal costs	5.5 million
Annual fixed maintenance costs per annum	1.5 million

Other annual fixed operating costs per annum (including depreciation) 10.6 million

Depreciation of the initial investment will be calculated using the straight-line method and has been included in other fixed operating costs.

The company's financial director has provided the following taxation information:

- Tax depreciation: 25% per annum of the initial investment (straight line method).
- Taxation rate: 30% of taxable profits.

The company uses a cost of capital of 12% per annum to evaluate projects of this type. Ignore inflation.

You are required to:

Evaluate the investment in the proposed system using net present value as the basis of your evaluation.

(12 Marks)

ii. Ceylon Spices Ltd., a Sri Lankan company specializing in the production and export of spices, is looking to enhance its competitive position in both local and international markets. To achieve this, the company is focusing on integrating various contemporary management accounting techniques. Hence, Ceylon Spices Ltd. is preparing for its annual review and has decided to use the Balanced Scorecard to measure and manage its performance across different areas. Additionally, the company decided to use some other management accounting methods to support its Balanced Scorecard strategy. The key areas of focus include:

- **Balanced Scorecard:** Ceylon Spices Ltd. will use the Balanced Scorecard to track performance across four perspectives: Financial, Customer, Internal Business Processes, and Learning and Growth.
- **Life Cycle Costing:** The company will analyze the costs associated with each spice product from cultivation through processing, packaging, and distribution.
- **Target Costing:** Ceylon Spices will set cost targets for its products to remain competitive in the international market while maintaining profitability.

- Environmental Accounting: Ceylon Spices will account for the costs associated with environmental practices, such as sustainable farming and waste management.

You are required to explain:

- A. How can the Balanced Scorecard help Ceylon Spices Ltd. align its operational activities with its strategic goals, and what specific metrics should be used for each of the four perspectives?
- B. How can Target Costing be used alongside the Balanced Scorecard to help Ceylon Spices Ltd. achieve its profitability and market competitiveness goals?

(08 Marks)

(Total 20 Marks)