THE INSTITUTE OF CHARTERED ACCOUNTANTS OF SRI LANKA

No. of pages:15

# Corporate Level

## Advanced Management Accounting

**Instructions to candidates**

(1) Time allowed: Reading and planning – 15 minutes
Writing – 3 hours

(2) Total: 100 marks

(3) **All questions are compulsory.**

(4) This paper consists of three sections.
Section 1:10 multiple choice questions (MCQs)
Section 2: 4 questions
Section 3: 2 questions

(5) This is a **closed book** examination.

(6) Answers to Question 1 (the most appropriate answer (A, B, C or D)) should be entered in the answer booklet against the relevant question number.

(7) Begin each answer in Section 2 and Section 3 on a separate page in the answer booklet.

(8) All answers should be in the **English language** in the answer booklet/s given to you.

(9) Answers written on the answer booklets, graph papers and any other stationery distributed at the examination hall, only, are considered in marking of the answer scripts. Any other attached documents are not taken into account at the time of marking the answer scripts.

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JULY 2022

# SECTION 1

*All questions are compulsory.*
*Total marks for Section 1 is 20 marks.*
*Recommended time for the section is 36 minutes.*

**Question 01**

1.1 A book publisher follows total quality management (TQM) practices and in order to achieve continuous improvement, quality costs are evaluated on a monthly basis.

Consider the following quality cost items reported during last month.

(i) Professional fees paid for editing and proofreading activities.
(ii) Cost incurred to correct printing mistakes found after completing a batch.
(iii) Bad comments and low ratings from readers due to errors in the content.
(iv) Salaries paid to the inspector who randomly checks the books in the printing process.

Which of the above quality cost items reported during last month are costs of non-conformance?

A. (i) and (ii) only
B. (ii) and (iii) only
C. (i) and (iv) only
D. (iii) and (iv) only

(2 marks)

1.2 Consider the following in relation to business process reengineering (BPR) initiatives.

(i) Poor understanding of organisational goals prior to BPR initiatives.
(ii) Attempts to reengineer internal processes focused on customer service.
(iii) Employees' resistance to changing job roles, level of authority, reporting relationships, methods etc.
(iv) BPR initiatives which lack clear, focused, consistent ongoing communications to all levels of the company.

Which of the above could be reasons for the failure to deliver transformative and sustainable results from BPR initiatives?

A. (i), (ii) and (iv) only
B. (i), (iii) and (iv) only
C. (ii), (iii) and (iv) only
D. All of (i), (ii), (iii) and (iv)

(2 marks)

1.3 An apparel manufacturing company has recorded an actual learning rate of 80% in comparison with a learning rate of 70% predicted at the time of planning production. The following were presented as possible reasons for this variance.

(i) Staff turnover was recorded at its bare minimum during the period.
(ii) Production stoppages were higher than expected.
(iii) Unprecedented delays in material supply.
(iv) Production staff was familiar with the design of the product.

Reasons for the above difference in the actual learning rate would be:

A. (i) only
B. (i) and (iv) only
C. (ii) and (iii) only
D. (ii), (iii) and (iv) only

(2 marks)

1.4 A local government is planning to apply the life cycle costing technique when accounting for the environmental costs of its next highway construction project.

Consider the following approaches.

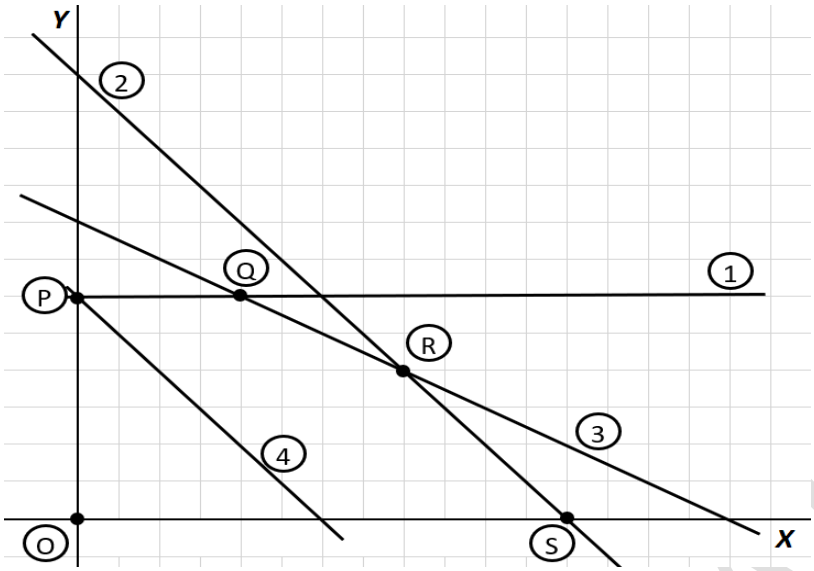
(i) Make an estimate of the environmental costs during the project's life cycle at the architectural design stage itself so the project is planned in a manner that aims to reduce the financial burden resulting from the environmental impact.
(ii) Obtain the actual environmental cost data throughout the project's life cycle to make appropriate disclosures in the financial statements.
(iii) Allocate funds for various environmental conservation activities from design to completion of the highway by deciding and scheduling these activities at the very beginning of the project.

Which of the above approaches should be considered when applying the life cycle costing technique to account for environmental costs?

A. (i) and (ii) only
B. (i) and (iii) only
C. (ii) and (iii) only
D. All of (i), (ii), and (iii)

(2 marks)

1.5 In determining the optimal product mix of a company, the following linear programming graph was constructed.




OPQRS is the feasible area on the graph. Line 4 represents the contribution and Line 1, Line 2 and Line 3 represent the resource constraints. The contribution line (Line 4) and Line 2 are parallel.

According to the graph, the optimal product mix at which the contribution is maximised lies at:

A. Point Q only
B. Point R only
C. Point S only
D. Any point including and between Point R and Point S on Line 2

(2 marks)

1.6 A furniture business is planning to discontinue its Cabinet section due to its net loss situation. The resources saved from the discontinuation will be reassigned to the Table section, which will double its current monthly production as a result. The current monthly performance details are as follows.

| | **Cabinet section** | **Table section** |
|---|---|---|
| Total contribution (Rs.) | 500,000 | 600,000 |
| Direct fixed costs (Rs.) | (250,000) | (180,000) |
| Allocated fixed costs (Rs.) | (280,000) | (300,000) |
| **Net profit/(loss) (Rs.)** | **(30,000)** | **120,000** |

What would be the expected increase in monthly net profitability as a result of the discontinuation decision?

A. Rs. 100,000
B. Rs. 150,000
C. Rs. 170,000
D. Rs. 240,000

(2 marks)

1.7 A company is considering a few investment options that would expand its operations into a particular foreign country. However, only one investment option could be accepted. The evaluation of non-financial factors revealed that there is political instability and an unfavourable economic situation in the foreign country. All the investments under consideration could generate positive net present values.

Which of the following correctly explains the investment technique to be used for the selection of the investment option?

A. The investment option with the highest net present value should be favoured as it helps in maximising shareholders' wealth.
B. The investment option with the shortest payback period should be favoured as it ensures fast recovery of the initial cash outlay.
C. The investment option with the highest internal rate of return should be favoured as it supports the selection of the project that generates the highest value.
D. The investment option with the highest accounting rate of return should be favoured as it ensures the highest profit after accounting for all the expenses.

(2 marks)

1.8 The following information relates to a particular product of a manufacturing company.

- Total cost function: Total Cost (TC) = 500,000 + 400q
- Demand function: Price (P) = 850 – 0.1q,

where q is the quantity produced/sold

The optimal price and the respective sales quantity that would maximise profit are:

| | **Selling price per unit (Rs.)** | **Sales quantity (units)** |
|---|---|---|
| A. | 600 | 2,500 |
| B. | 625 | 2,250 |
| C. | 680 | 1,700 |
| D. | 700 | 1,500 |

(2 marks)

1.9 An automobile company recently developed a new car model and the company decided to follow the market skimming pricing strategy when launching this new product to the market.

Consider the following statements.

(i) The car model is a new type of product that enters the market for the first time and hence expects a monopoly.
(ii) The image and features of the car model help to build a high-quality image that enables a high price to be charged.
(iii) It is expected that the demand is highly elastic for the new car model and buyers would be price sensitive.

Which of the above are possible reasons for the selection of the market skimming pricing strategy?

A. (i) and (ii) only
B. (i) and (iii) only
C. (ii) and (iii) only
D. None of (i), (ii) and (iii)

(2 marks)

1.10 A material supplier of a manufacturing company has offered quantity discounts for a particular raw material. Given below are three optional purchase quantity levels available to the company.

(i) Economic order quantity (EOQ)
(ii) One of the minimum order quantities above EOQ that qualify for an additional discount.
(iii) One of the minimum order quantities below EOQ that qualify for an additional discount.

Which of the above could be the appropriate optimal order quantity for this particular raw material?

A. (i) only
B. (i) and (ii) only
C. Either (i) or (ii) only
D. Either (i) or (iii) only

(2 marks)

**(Total: 20 marks)**

# SECTION 2

*All questions are compulsory.*
*Total marks for Section 2 is 40 marks.*
*Recommended time for the section is 72 minutes.*

**Question 02**

NeoTech (Pvt) Ltd (NPT) was established twenty years ago and produces electric cleaning equipment. The company currently manufactures three types of cordless domestic electric cleaners. Raw materials and components are purchased from a range of suppliers with whom NPT has built close relationships over the years. The company operates from a single manufacturing site in Colombo. Unlike in the past, NPT currently relies on highly automated processes and machines.

NPT at present accounts for production overhead costs according to the absorption costing approach based on labour utilisation. The following cost information is extracted from the budget prepared for the forthcoming financial year.

| | **Cleaner Type I** | **Cleaner Type II** | **Cleaner Type III** |
|---|---|---|---|
| Material cost per unit (Rs.) | 3,000 | 4,950 | 6,000 |
| Labour cost per unit (Rs.) | 200 | 300 | 400 |
| Variable overheads per unit (Rs.) | 300 | 500 | 600 |
| Production overhead costs per unit (Rs.) | 1,500 | 2,250 | 3,000 |
| **Total cost per unit (Rs.)** | **5,000** | **8,000** | **10,000** |
| Budgeted sales/production | 6,400 units | 9,680 units | 12,800 units |
| Selling price per unit (Rs.) | 8,000 | 12,800 | 16,000 |

The selling price is determined by adding a 60% profit mark-up on the full unit cost. The final budget review meeting was held recently, and the following comment was made by the marketing manager.

*"Our prices are not consistent with the prices of the competitive products in the market. When competitors are selling at higher prices, we are selling similar products at lower prices and vice versa".*

You are the management accountant at NPT. You are required to analyse the product costing system at the company and report to the management.

**Required:**

(a) **Assess** the validity of the comment raised by the marketing manager together with the drawbacks of the present product costing system at NPT.

(5 marks)

(b) **Explain** the activity-based costing (ABC) system and how it would benefit NPT.

(5 marks)

**(Total: 10 marks)**

**Question 03**

Comfort Fashions (Pvt) Ltd (CFL) is a clothing company. Its head office is situated in Colombo City with four branches located in a few main cities. CFL's business involves purchasing finished clothes from registered garment factories and selling them through its business locations. Each branch performs its own purchases independently.

Consumer buying behaviour is rapidly changing in the industry and online shopping has become the current trend. Therefore, CFL decided to expand its sales by selling online as well. This expansion will significantly reduce the number of customers visiting the branches and therefore CFL's plan is to close down a few branches.

A web page that will include all fashion items together with all their details is being developed to facilitate online purchasing. To improve efficiency, it is expected that updating of the web page will be done by the procurement division based on the items ordered, and this will create additional tasks to the procurement division.

CFL has been following the incremental budgeting system. Given below is the summary of the procurement budget for the month of August 2022.

| Business function | Budgeted cost | Break-down of cost items |
|---|---|---|
| Procurement | Rs. 10 million | Purchase of finished clothes, transportation from supplier's place to warehouse, salaries paid to the procurement staff at branch locations, and other overheads. |

Expenses linked to the expansion have created pressure to allocate money for investment needs. CFL is now considering adopting the zero-based budgeting (ZBB) system from the next budgeting period. By adopting ZBB the company is expecting to take a more detailed look at its expenses and cut costs to the maximum possible level.

**Required:**

(a) **Discuss** two (02) advantages and two (02) challenges of adopting the ZBB system at CFL.

(4 marks)

(b) **Explain** the approach to prepare a ZBB for the procurement division at CFL using the three-step approach.

(6 marks)

**(Total: 10 marks)**

## Question 04

Ecovilla (Pvt) Ltd (EPL) is an eco-hotel with 100 rooms situated in Haputale. The Covid-19 pandemic affected the business of the hotel in the recent past. With the recent relaxation of restrictions and increase in momentum of tourist arrivals, the management of the hotel is optimistic about attracting more guests to the hotel. However, the demand for rooms under the prevailing conditions is uncertain. The new Covid-19 variant Omicron, which is spreading rapidly in the country, is another negative factor affecting hotel operations at present.

If spreading of the Omicron variant could be controlled through vaccination, then the hotel has a chance of occupying 70% of the room nights in the forthcoming quarter. There is only a 60% likelihood of this variant being controlled through vaccination. In case the spreading cannot be controlled through vaccination, the occupancy could still be at 50% of the room nights.

As a measure of increasing demand for rooms, the management of EPL is also considering listing the hotel in either one of the following websites.

| Website | Commission rate on room rates | Occupancy rate if virus is controlled | Occupancy rate if virus is not controlled |
|---|---|---|---|
| www.booking.com | 7% | 95% room nights | 85% room nights |
| www.tripadvisor.com | 5% | 90% room nights | 75% room nights |

The regular rate per room night is Rs. 20,000; 30% of which is variable operational cost that also includes the cost of food and staff. The commission payable for each website is also indicated in the table above.

Monthly operational fixed cost is Rs. 20 million.

The full capacity of the hotel is 3,000 room nights during a period of one month.

You are the management accountant of EPL, and you are required to advise the management on the following.

**Required:**

**Evaluate** the best course of action, financially, for the forthcoming quarter for EPL using a decision tree (you are advised to clearly show all possible outcomes in the decision tree with relevant probabilities as applicable).

**(Total: 10 marks)**

## Question 05

Premier Builders (Pvt) Ltd (PBL) handles mega infrastructure development projects for its various clients. Most of its projects last for a few years and PBL usually collects a considerable amount of the full construction cost in advance soon after signing the agreements with the clients. These project funds are placed in a general pool and the treasury manager invests the money in short-term financial instruments to be redeemed in future periods based on the yearly cash requirements for ongoing infrastructure projects.

PBL at the inception made a 3-year investment in a public fund account and at maturity it should earn Rs. 20 million for the company. This investment was acquired one year ago by paying the market value. The annual coupon rate paid for the fund is 6% and the market required rate of return from these funds is 12%.

PBL has faced some challenges in recovering another private fund investment, which is due now. This investment was placed to bear this year's construction cost. The management has serious concerns on its ability to recover the investments in the private fund. However, as an immediate action, it was decided to withdraw the public fund investment now. The best quote received was Rs. 17.5 million.

**Required:**

(a) **Assess** the following for the above public fund account investment

(i) Value of the initial investment made in the fund
(ii) Interest yield

(3 marks)

(b) **Calculate** the percentage of redemption yield if PBL decides to sell the fund to the highest bidder.

(4 marks)

(c) **Explain** three (03) key considerations that should have been taken into account by PBL before deciding to invest in the private fund.

(3 marks)

**(Total: 10 marks)**

# SECTION 3

*Both questions are compulsory.*
*Total marks for Section 3 is 40 marks.*
*Recommended time for the section is 72 minutes.*

**Question 06**

Atlantis Sportswear (Pvt) Ltd (ASL) is a wholesale sports item manufacturer that mainly serves the local market. Its Footwear division caters to a highly competitive market segment representing international brand names. The factory operations are handled by the factory officers while all the procurement needs are centrally fulfilled by ASL. A standard absorption costing system is used for planning and controlling purposes. Standards for budgeting purposes are set on a periodical basis and a variance analysis report is prepared at the end of each month.

Given below is the performance report prepared for the month of June 2022.

| | **Rs. '000** | | |
|---|---|---|---|
| | **Budget** | **Actual** | **Variance** |
| Sales revenue | 75,000 | 91,000 | 16,000 |
| | | | |
| Material cost | 30,000 | 38,000 | (8,000) |
| Labour cost | 15,000 | 22,000 | (7,000) |
| Production overheads | 6,000 | 7,000 | (1,000) |
| **Operating profit/(loss)** | **24,000** | **24,000** | **-** |

**Other information relevant for the month of June 2022**

1. Total budgeted number of sales units for the period was 15,000 pairs (units) of shoes. During the month, one major wholesale buyer signed a contract to purchase shoes of another brand and the monthly committed additional units under this contract was going to be 3,000 units. Details about this new contract were not available when setting the original budget for June. The actual selling price per pair of shoes for the month was Rs. 5,200.

2. Half (0.5) a unit of imported materials is used to make a pair of shoes. During the month a total of 8,600 material units were purchased and fully used in the factory operations. The material market faced a huge disruption due to adverse environmental conditions and limited stocks were available in the market. In response to the situation, most of the suppliers charged Rs. 500 extra per material unit. Further it was noted that the standard material usage should have been 0.6 material units per pair of shoes.

3. The standard time required to make one pair of shoes was two (02) labour hours and during the month a total of 36,000 labour hours were actually paid for. Considering the competition in the market, ASL introduced additional quality standards into the production process. An extra 10% of time was estimated to fulfill these additional requirements. The workers who follow a similar level of quality standards are paid Rs. 100 more per hour in the market.

4. Production overheads are absorbed to the completed units on a labour hours basis. During the month ASL implemented a few overhead control activities over its factory operations. These activities would bring savings of 10% in the production overhead absorption rate per labour hour.

5. ASL makes shoes based on orders received and hence there will not be any opening or closing inventory items.

**Required:**

(a) **Explain** how the industry benchmarking practice could improve the standard costing system at ASL.

(2 marks)

(b) **Prepare** the revised budget to be used for performance evaluation.

(3 marks)

(c) **Assess** the following variances for the month of June 2022.

(i) Sales volume planning variance
(ii) Sales volume operating variance
(iii) Material price planning variance
(iv) Material usage operating variance
(v) Labour rate operating variance
(vi) Labour efficiency operating variance

(12 marks)

(d) ASL has a practice of paying a special bonus to all its factory staff if the budgeted results are exceeded. At a recent management meeting it was mentioned that no special bonus would be approved for June 2022 as the budgeted profit has not been exceeded.

If you are the factory manager, how would you **convince** ASL's management to approve the special bonus to all your factory staff.

(3 marks)

**(Total: 20 marks)**

**Question 07**

City Glassware (Pvt) Ltd (CGL) manufactures three types of glasses (wine glasses, juice glasses, and cocktail glasses) for the export market, using a common injection molding machine and three different dyes. The dyes are changeable based on the desired product. Each type of glass is packed into canvas cases containing 10 such glasses in each case.

- The dye for wine glasses can be used to produce 60 cases in five hours of machine time, while the dye for juice glasses can produce 100 cases in five hours of machine time. 50 cases of cocktail glasses can be produced with its dye in five hours of machine time. The injection molding machine is operated only on a schedule of 150 hours of production per month. Based on the current supply contract, at least 300 cases of wine glasses should be supplied in a month.

- The main raw material for glass manufacturing is quartz sand, and it is limited in supply due to the prevailing import restrictions. CGL can currently procure only 6,000kg of quartz sand in a period of one month. Utilisation of this material by each type of glass is as follows.

| **Type of glass** | **Quartz sand requirement per glass** |
|---|---|
| Wine | 150 grams |
| Juice | 250 grams |
| Cocktail | 300 grams |

- CGL stores its production during a month (until it is dispatched for exporting) in its warehouse which has a capacity of 1,800 cubic feet. The space requirement of each type of glass is given in the following table.

| **Type of glass** | **Space requirement per case** |
|---|---|
| Wine | 0.50 cubic feet |
| Juice | 0.75 cubic feet |
| Cocktail | 1.00 cubic feet |

- The selling price and contribution to sales ratio for each product is given below.

| **Type of glass** | **Selling price per case (USD)** | **Contribution to sales ratio (%)** |
|---|---|---|
| Wine | USD 30 | 40% |
| Juice | USD 60 | 40% |
| Cocktail | USD 50 | 40% |

With the prevailing production constraints, the management of CGL is uncertain whether they are making the optimal mix of products where the profit of the operations is maximised with the given resources.

You are working as the management accountant of CGL, and you are advised to evaluate the optimal product mix per month using the Linear Programming Simplex Method.

Accordingly, you need to formulate the problem information into a linear programming model so that you are able to utilise a computer software to obtain the final Simplex Tableau.

**Required:**

(a) **Formulate** the information of the problem into a linear programming model.

You may assume the following notations.

| **Type of glass** | **Quantity to be produced in no. of cases** |
|---|---|
| Wine | P |
| Juice | Q |
| Cocktail | R |

(6 marks)

By using the computer software, you have obtained the following final Simplex Tableau for the linear programming problem formulated in (a) above.

| | P | Q | R | $S_1$ | $S_2$ | $S_3$ | $S_4$ | Solution |
|---|---|---|---|---|---|---|---|---|
| $S_1$ | 0 | 0 | $-\frac{1}{3}$ | 1 | 0 | $-3\frac{1}{3}$ | $-\frac{1}{6}$ | 50 |
| $S_2$ | 0 | 0 | 2 | 0 | 1 | - 4 | 3 | 900 |
| Q | 0 | 1 | $1\frac{1}{3}$ | 0 | 0 | $1\frac{1}{3}$ | $\frac{2}{3}$ | 2,200 |
| P | 1 | 0 | 0 | 0 | 0 | 0 | - 1 | 300 |
| Z | 0 | 0 | 12 | 0 | 0 | 32 | 4 | 56,400 |

| **Notation** | **Description** |
|---|---|
| $S_1$ | Slack variable for quartz sand in kg |
| $S_2$ | Slack variable for machine time in minutes |
| $S_3$ | Slack variable for warehouse space in cubic feet |
| $S_4$ | Slack variable for minimum production of wine glasses in no. of cases |

**Required:**

(b) **Assess** the following for a period of one month, using the final Simplex Tableau.

(i) Optimal product mix (for P, Q and R) and the resulting contribution in USD
(ii) Binding resources and their opportunity cost
(iii) Unutilised resources in quantities (if any)

(4 marks)

(c) The management of CGL is considering acquiring a temporary space on lease for the storage of finished products with the aim of increasing production.

In this regard, **advise** the management of CGL on the following.

(i) The maximum space that should be taken on lease, provided that other scarce resources will remain constant.

(2 marks)

(ii) The revised status of resources, product mix and contribution of CGL for a period of one month if only the maximum space (computed in (c)(i) above) is taken on lease.

(4 marks)

(d) The buyer has now expressed their agreement to reduce the minimum no. of cases of wine glasses to be supplied per month, to 285 cases.

**Demonstrate** using the final Simplex Tableau how this change will impact resources, the product mix and the contribution stated in the original final Simplex Tableau.

(4 marks)

**(Total: 20 marks)**