

CA



THE INSTITUTE OF  
**CHARTERED** ACCOUNTANTS  
OF SRI LANKA

# **SUGGESTED SOLUTIONS**

**KB 2 – Business Management Accounting**

**December 2019**

# SECTION 1

## Answer 01

### Relevant learning outcome/s: 1.1.3

Evaluate product profitability and customer profitability decisions using information generated from absorption costing and activity-based costing.

Study text reference: Pages 22 – 28

(a)

	Outlet sales	Supermarkets	Wholesalers	
Sales quantity (cups)	10,000	80,000	120,000	
Discount offered	5%	30%	20%	
Marked selling price per cup (Rs.)	1,000	1,000	1,000	
Discounted selling price per cup (Rs.)	950	700	800	
Variable cost per cup (Rs.)	(600)	(600)	(600)	
Contribution per cup (Rs.)	350	100	200	
Contribution (Rs.)	3,500,000	8,000,000	24,000,000	
<b>Allocation of overheads based on ABC</b>				
				<b>Cost per cost driver</b>
Cost of sales visits (Rs. 7,000,000/2,000)	-	700,000	6,300,000	<b>3,500.00</b>
Cost of order processing (Rs. 3,000,000/1,000)	1,200,000	300,000	1,500,000	<b>3,000.00</b>
Customer delivery (Rs. 6,700,000/600)	-	-	6,700,000	<b>11,166.67</b>
Total (Rs.)	1,200,000	1,000,000	14,500,000	
Net profit after allocating costs based on ABC method (Rs.)	2,300,000	7,000,000	9,500,000	

(b)	No. of cups per delivery to supermarkets	400
		<b>Rs.</b>
	Cost per delivery (6,700,000/600)	11,167
	Additional discount offered for collection of goods from HPL (5% * 1,000 * 400)	<u>(20,000)</u>
	Cost saving if delivered to supermarkets	<u>8,833</u>
	Total saving (80,000/400) * 8,833	1,766,667

If HPL delivers to supermarkets and awards only a 25% discount, HPL's profit could increase by Rs. 1,766,667. Therefore HPL should deliver goods to supermarkets instead of giving an additional 5% discount.

### Alternatively

Number of deliveries	(80,000/400)	200
Cost per delivery (Rs.)	(6,700,000/600)	11,166.67
Delivery cost (Rs.)		2,233,333.33
Revenue loss (Rs.)	(80,000 * 1,000 * 5%)	4,000,000.00
Net revenue loss (Rs.)		1,766,666.67

- (c) - Persuade customers to increase order quantities (even by offering discounts after a cost benefit analysis) and thereby reduce the number of orders which will reduce the order processing cost.
- Curtail sales visits by improving the efficiency of delivery scheduling, attempting to merge deliveries to the same customers and combining deliveries to different customers, which will reduce the cost of sales visits as well as delivery costs.

**(Total: 10 marks)**

NOT FOR SALE

**Answer 02**

**Relevant learning outcome/s: 1.3.2**

Demonstrate the importance of the following concepts for cost accounting and decision making:

- Kaizen costing
- Quality-related costing (TQM)
- Manufacturing/Enterprise resource planning (MRP and ERP)

**Study text reference:** Pages 97 – 99 and 103 – 104

- (a) Kaizen costing focuses on obtaining small incremental cost reductions during the production stage of the product life cycle. Kaizen costing is a system of cost reduction rather than cost control, and is based upon attaining incremental cost reductions by making continuous small changes in the product or the method of operations.

The main differences between Kaizen costing and standard costing are as follows.

	<b>Standard Costing</b>	<b>Kaizen Costing</b>
01	It is used for cost control.	It is used for cost reduction.
02	It assumes that current manufacturing conditions will stay the same.	It assumes continuous improvement.
03	The cost focus is on standard costs based on static conditions.	The cost focus is on actual costs assuming dynamic conditions.
04	The aim is to meet cost performance standards.	The aim is to achieve cost reduction targets.
05	Standards are set for a longer period of time (Ex. every six or twelve months.)	Cost reduction targets are set and applied more frequently (Ex. Monthly)
06	Costs are controlled using variance analysis based on standard and actual costs.	Costs are reduced by implementing continuous improvement (Kaizen) to attain the target profit or to reduce the gap between target and estimated profit.
07	Management should investigate and respond when standards are not met.	Management should investigate and respond when target Kaizen amounts are not attained.
08	Employees are often viewed as the cause of problems.	They are viewed as the source of, and are empowered to find, the solutions for cost reductions.

- (b) The TQM process includes setting quality standards for all the processes in the company, establishing procedures and production methods to support the achievement of the set standards, measuring and monitoring the actual quality, and taking control action in order to rectify any underperforming activities.

***“Get things right first time”***

Every mistake, delay and misunderstanding, directly costs an organisation money through wasted time and effort, including time taken to pacify customers. The lost potential for future sales because of poor customer service must also be taken into account. TQM will positively impact the profitability of the company although there will be a cost of quality management.

**Continuous improvement**

TQM believes that it is always possible to improve processes and eliminate the non-value adding activities and processes, so its aim is to get it *more* right next time. Through this, the quality of products can be improved and it leads to a competitive advantage.

**Encourage mutual respect and teamwork**

TQM recognises that workers can be motivated by a positive approach to quality and it increases staff morale leading to greater productivity and efficiency.

**(Total: 10 marks)****Answer 03****Relevant learning outcome/s: 3.3.1**

Assess the further processing decisions under processes anomalies, joint-products and by-products.

**Study text reference:** Pages 336 – 345 and 353

(a)

**Relative sales value apportionment method**

	NH	CL/PC	Total
Sales value at split-off (Rs. million)	24	24	48
Joint cost allocation (Rs. million)	20	20	40

**Physical measurement method**

	NH	CL/PC	Total
Production at split-off (metric tonnes)	4,800	3,200	8,000
Joint cost allocation (Rs. million)	24	16	40

(b)

**If CL is processed:**

	Rs.	Rs. million	
Total sales of PC		40	
Further processing cost		8	
Contribution made by further processing		32	
Further processing contribution per metric tonne of CL	10,000		
Minimum price required	10,000		

**(Total: 10 marks)**

## Answer 04

**Relevant learning outcome/s: 4.1.1**

Discuss decentralisation and different types of responsibility centres (revenue, cost, profit and investment centres).

**Study text reference:** Pages 213, 552 – 553 and 557

(a)

- Senior management relieved from trivial matters leaving them with more time for overall review.
- Speed in operational decisions as the manager at the division swiftly reacts to changing local circumstances.
- Provision of better training grounds to junior staff, who aspire to be at the topmost level of the organisation.
- Encourages initiatives and motivates managers.
- Increases flexibility and reduces communication gaps.
- Introduces appropriate recording and measuring procedures.
- Determines the form, content and effective basis for preparation of budgets at different levels of management.

(b)

- Nature and similarity of the core operation (e.g. electrical equipment and components are separate responsibility centres)
- Geographical location of the unit (the Seethawaka factory can be treated as a separate responsibility centre).
- Description of the type of activities that are common (such as HR division for HR activities, finance division for finance activities).
- Steering and control concept in the unit.
- The most common compensation method, both from a management and tax perspective.
- Legal entity such as the subsidiary company.

(c) The manager of the Seethawaka factory can be empowered to handle one, the revenue, where his key performance indicator is mainly to increase the revenue of the factory. In this case he will not be responsible for the cost and profit of the factory. Alternatively, the profit of the Seethawaka factory can be treated as his key performance indicator, in which case he is responsible for the revenue as well as cost and profit.

In the first instance the Seethawaka factory is a revenue centre. When the manager is responsible for revenue and costs, the factory becomes a profit centre of GTL. The nature of the responsibility centre is how each of the centre performances are measured and responsibilities are demarcated.

(d) The controllability principle is that managers of responsibility centres should only be held accountable for costs over which they have some influence. From a motivation point of view this is important because it can be very demoralising for managers who feel their performance is being judged on the basis of something over which they have no influence.

**(Total: 10 marks)**

## Answer 05

### Relevant learning outcome/s: 5.1.7

Assess optimum inventory decision (EOQ) including the decision of whether to accept a quantity discount or not.

**Study text reference:** Pages 647 – 651

(a)

Unit price (Rs.)	1,600	1,500	1,400
EOQ (using the EOQ model)	5,000	5,060	5,121
Most economical order quantity to qualify for the price	5,000	5,060	10,000
<b>Per annum</b>			
Number of orders	5.00	4.94	2.50
Ordering cost (Rs. '000)	1,600	1,581	800
Carrying cost (Rs. '000)	1,600	1,581	3,050
Purchasing cost (Rs. '000)	40,000	37,500	35,000
Total cost (Rs. '000)	43,200	40,662	38,850

Based on the above analysis, total cost can be minimised by placing orders of 10,000 units at a time, at a price of Rs. 1,400

(b)

- (i) The EOQ model assumes that demand is constant over a period longer than the period considered for calculations in an assessment. This assumption is made in the calculation of ordering costs as a function of order quantity.

For example in the above assessment the number of orders considered for ordering cost calculations contains a fraction (when order quantity is 10,000, the number of orders per annum is 2.5). But practically there are 5 orders over a period of 2 years and this is the theoretical proportion. This assumes that the ordering process continues for at least a period of 2 years. Otherwise it should be considered as 2 orders of 10,000 and one order of 5,000 for the year, which makes it 3 orders for the year for the purpose of calculating the ordering cost.

- (ii) The EOQ model assumes that sufficient resources are available to accommodate all variables associated with the EOQ. For example in the above assessment EOQ is 5,000 units when the price is Rs. 1,600. The company should have Rs. 8 million of working capital to purchase 5,000 units; warehouse capacity for 5,000 units to store them when they are delivered; capacity to transport 5,000 units as one consignment; and a supplier capable of supplying 5,000 units when an order is placed.

**(Total: 10 marks)**

## SECTION 2

### Answer 06

**Relevant learning outcome/s: 2.1.1, 2.1.2 and 2.2.3**

- 2.1.1 Interpret the basic types of variances (material/labour/variable overhead/fixed overheads/sales).  
 2.1.2 Discuss the factors to be considered when deciding whether to investigate a variance or not.  
 2.2.3 Analyse the budgetary control statement (original budget, flexed budget, actual and variances).

Study text reference: Pages 132 – 136, 138 – 140, and 216 – 219

- (a) Comparing the original budget with the actual activity level will not generate meaningful information for management decisions since the actual activity level could be different from those which were budgeted. Therefore the requirement arises to compare costs and revenue, actual results against the budget, at the same level of activity (production/sales). In other words the original budget should be flexed for the actual activity level in order to generate meaningful information.
- (b)

### Budgetary control statement

	Original budget	Flexed budget	Actual	Budget variance
Sales/production	5,000	6,000	6,000	-
Selling price (Rs.)	1,400	1,400	1,498	98
Revenue (Rs.)	7,000,000	8,400,000	8,988,000	588,000
<b>Cost of sales (Rs.)</b>				
- Material A	1,000,000	1,200,000	1,230,000	(30,000)
- Material B	1,200,000	1,440,000	1,740,000	(300,000)
- Cake compound	1,200,000	1,440,000	1,650,000	(210,000)
- Labour	750,000	900,000	1,260,000	(360,000)
- Fixed production cost	500,000	500,000	540,000	(40,000)
Total cost (Rs.)	4,650,000	5,480,000	6,420,000	(940,000)
<b>Operating profit (Rs.)</b>	<b>2,350,000</b>	<b>2,920,000</b>	<b>2,568,000</b>	

- (c)  
 (i) Material price variance = (Std price – Act price) \* Act purchase

$$\begin{aligned}
 \text{Material A} &= (400 - 410) * 3,000 = && (30,000) \text{ Adv} \\
 \text{Material B} &= (600 - 580) * 3,000 = && 60,000 \text{ Fav} \\
 \text{Cake compound} &= (1,200 - 1,650,000/1,500) * 1,500 = && \underline{150,000} \text{ Fav} \\
 \text{Total price variance} &&& \underline{180,000} \text{ Fav}
 \end{aligned}$$

$$\text{Material usage variance} = (\text{Std usage} - \text{Act usage}) * \text{Std price}$$

$$\begin{aligned}
 \text{Material A} &= (6,000 * 0.5 - 3,000) * 400 = && - \\
 \text{Material B} &= (6,000 * 0.4 - 3,000) * 600 = && (360,000) \text{ Adv} \\
 \text{Cake compound} &= (6,000 * 0.2 - 1,500) * 1,200 = && \underline{(360,000)} \text{ Adv} \\
 \text{Total usage variance} &&& \underline{(720,000)} \text{ Adv}
 \end{aligned}$$



(ii) Labour rate variance = (Std rate – Act rate) \* Act hours

$$\text{Labour rate variance} = (300 - 1,260,000/3,600) * 3,600 = (180,000) \text{ Adv}$$

Labour efficiency variance = (Std hours – Act hours) \* Std rate

$$\text{Labour efficiency variance} = (0.5 * 6,000 - 3,600) * 300 = (180,000) \text{ Adv}$$

(iii) FPOH expenditure variance = Btd FPOH – Act FPOH

$$\text{FPOH expenditure variance} = (500,000 - 540,000) = (40,000) \text{ Adv}$$

(iv) FPOH volume variance = (Act production – Btd production) \* Std rate

$$\text{FPOH volume variance} = (6,000 - 5,000) * 100 = 100,000 \text{ Fav}$$

(v) Selling price variance = (Act price – Btd price) \* Act quantity sold

$$\text{Selling price variance} = (1,498 - 1,400) * 6,000 = 588,000 \text{ Fav}$$

(vi) Sales volume variance = (Act qty – Btd qty) \* Std profit per unit

$$\text{Sales volume variance} = (6,000 - 5,000) * 470 = 470,000 \text{ Fav}$$

(d)

### Operating statement

Budgeted profit for November (Rs.)			2,350,000
	<b>Favourable variances</b>	<b>Adverse variances</b>	
Material price	180,000		
Material usage		720,000	
Labour rate		180,000	
Labour efficiency		180,000	
FPOH expenditure		40,000	
FPOH volume	100,000		
Selling price	588,000		
Sales volume	<u>470,000</u>		
	<u>1,338,000</u>	<u>1,120,000</u>	218,000
<b>Actual profit (Rs.)</b>			<b>2,568,000</b>

(e)

- Materiality – the amount of the variance should be substantial enough to necessitate the investigation.
- Controllability – if the reason for the variance is obvious, say for example the management has taken a decision to give a pay hike of 10%, then the labour rate variance could be adverse. If the reasons are known, then there is no need of investigating a variance.
- The type of the standard being used – if the standard is set at the ideal level of efficiency, then the variance could always be adverse.

- Variance trend – if a variance is occurring every month and it is of the same/similar amount then investigations need to be done to find out the root cause.
- Interdependence between variances – if one variance affects the other then there is no requirement for an investigation. For example cheap material will make the material price variance favourable and the efficiency variance adverse. Cheap materials could also make the labour efficiency variance adverse.
- Cost of the investigation – if the estimated cost of the investigation is more than the benefit of the investigation, it is pointless to carry out the investigation.

**(Total: 25 marks)**

NOT FOR SALE

**Answer 07**

**Relevant learning outcome/s: 3.8.2**

Demonstrate how a decision would be made under conditions of uncertainty, using:

- Decision tree-based expected value calculations
- Data tables
- Alternative decision criteria (minimax, maximax and minimax regret)

**Study text reference:** Pages 533 – 540

(i) and (ii)

*Note: Property acquisition cost, development and legal/survey costs are not relevant.*

	First 2 years	2nd year	Year 3 - 5		Y1-2	Y2	Y3-5	Y5
				DF	1.646	0.769	1.786	0.519
			High 0.4		300	-200	400	570
		Invest			493.8	-153.8	714.4	295.83
		588.53	Low 0.6		300	-200	150	570
High 0.4	448.35				493.8	-153.8	267.9	295.83
EPV=			High0.5		300	0	300	520
		627.08	Not Invest		493.8	0	535.8	269.88
			Low 0.5		300	0	100	520
					493.8	0	178.6	269.88
			High 0.6		100	-200	300	570
		Invest			164.6	-153.8	535.8	295.83
		534.95	Low 0.4		100	-200	100	570
Low 0.6	421.43				164.6	-153.8	178.6	295.83
PV =			High0.5		100	0	250	520
		537.78	Not Invest		164.6	0	446.5	269.88
			Low 0.5		100	0	50	520
					164.6	0	89.3	269.88

(iii)

Expected present value (EPV) = Rs. 869.78 million

The project is recommended as expected net present value (ENPV) > 0

Investment = Rs. 200 million (investment in Y2 is not recommended for all outcomes in Y1 – Y2)

Opportunity cost = Rs. 450 million

ENPV = Rs. 219.78 million

(b)

Route	Profit/(loss) per annum (Rs. million)			Maximin rule	Maximax rule
	Grade A	Grade B	Grade C	Minimum profit (Rs. million)	Maximum profit (Rs. million)
P	61	31	-20	-20	61
Q	16	52	79	16	79
R	97	28	-92	-92	97

Under the maximin rule Route Q is preferable.

Under maximax rule Route R is preferable.

**(Total: 25 marks)**

# CA



THE INSTITUTE OF  
**CHARTERED ACCOUNTANTS**  
OF SRI LANKA

## Notice of Disclaimer

The answers given are entirely by the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) and you accept the answers on an "as is" basis.

They are not intended as "Model answers", but rather as suggested solutions.

The answers have two fundamental purposes, namely:

1. to provide a detailed example of a suggested solution to an examination question; and
2. to assist students with their research into the subject and to further their understanding and appreciation of the subject.

The Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) makes no warranties with respect to the suggested solutions and as such there should be no reason for you to bring any grievance against the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka). However, if you do bring any action, claim, suit, threat or demand against the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka), and you do not substantially prevail, you shall pay the Institute of Chartered Accountants of Sri Lanka's (CA Sri Lanka's) entire legal fees and costs attached to such action. In the same token, if the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) is forced to take legal action to enforce this right or any of its rights described herein or under the laws of Sri Lanka, you will pay the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka) legal fees and costs.

---

© 2013 by the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka).

All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of the Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka).

---