

**CA**



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

# **SUGGESTED SOLUTIONS**

**KE2 – Management Accounting Information**

**March 2018**

## SECTION 01

### Answer 01

1.1

Relevant Learning outcome : 1.1.2  
Explain the nature, scope and purpose of cost classifications (direct/indirect, fixed/variable/semi-variable, production/period, controllable/non-controllable, relevant/ non-relevant costs).

Study Text reference: Page No. 105

**Correct Answer: A**

1.2

Relevant Learning outcome : 1.2.2  
Explain material control systems and calculate EOQ, reorder levels, maximum and minimum levels, valuation of stocks and the issues using FIFO, LIFO and AVCO and calculate profit under each stock valuation method.

Study Text reference: Page No. 160

**Correct Answer: B**

1.3

Relevant Learning outcome :1.4.1  
Explain characteristics of job, batch, contract, process and service costing.

Study Text reference: Page No. 218

**Correct Answer: D**

1.4

Relevant Learning outcome : 2.1.1  
Calculate mark-up and margin, and arrive at the amount in rupees for given mark-up/margin percentages in scenarios (including VAT, income tax and discounts)

Study Text reference: Page No. 19

**Correct Answer: D**

1.5

Relevant Learning outcome : 2.3.1  
Calculate and interpret the mean, standard deviation and coefficient of variation.

Study Text reference: Page No. 31

**Correct Answer: C**

1.6

Relevant Learning outcome : 3.2.2

Explain the steps involved in ABC

Study Text reference: Page No. 389

**Correct Answer: B**

1.7

Relevant Learning outcome : 5.2.1

Calculate and interpret basic variances on direct material cost, direct labour cost, variable production overheads, fixed production overheads, and sales.

Study Text reference: Page No. 500

**Correct Answer: A**

1.8

Relevant Learning outcome : 6.1.1

Identify linear and quadratic functions related to revenue, costs and profit in the algebraic, and graphical forms.

Study Text reference: Page No. 558

**Correct Answer: A**

1.9

Relevant Learning outcome :6.2.1

Demonstrate the use of differential calculus in maximisation and minimisation decisions (using profit function or marginal functions with necessary and sufficient conditions).

Study Text reference: Page No. 561

**Correct Answer: B**

1.10

Relevant Learning outcome : 7.1.1

Discuss the purposes of budgeting

Study Text reference: Page No. 584

**Correct Answer: C**

**(2 x 10 = Total 20 marks)**

## Question 02

### 2.1

Relevant Learning outcome :1.1.1

Define the terms cost, cost unit, composite cost units, cost centre and elements of cost.

Study Text reference: Page No. 94/95

Cost unit is a unit of product or service to which cost can be related. Cost units are where a single cost unit is used to charge for a particular product or a service. For example, the transport service provider can charge its customers based on the number of kilometres travelled without considering the weight of the load transported.

Composite cost unit is where two or more cost units are used to value a product or a service. For example, the transport service provider can consider both the distance transported and also the weight of the load transported and accordingly charge its customers based on per Ton/Kilometre basis.

### 2.2

Relevant Learning outcome : 1.2.2

Explain material control systems and calculate EOQ, reorder levels, maximum and minimum levels, valuation of stocks and the issues using FIFO, LIFO and AVCO and calculate profit under each stock valuation method.

Study Text reference: Page No. 137/138

Maximum inventory level = Reorder level + Reorder quantity - (Min demand\*Minimum lead time)

Maximum inventory level = 7,200 + 8,000 - (200\*12) = 12,800 units

Minimum inventory level = Reorder level - (Average demand \* Average lead time)

Minimum inventory level = 7,200 - (400\*14) = 1,600 units

### 2.3

Relevant Learning outcome : 1.4.2

Demonstrate job, batch, contract (contract account preparation and recognising profit), process (losses, gains, scrap value, disposal cost, closing WIP and opening WIP based on AVCO method) and service costing under appropriate business situations.

Study Text reference: Page No. 238

Input cost (Rs.)	1,500,000
Additional cost incurred (Rs.)	1,020,000
Total cost (Rs.)	2,520,000
Normal output (20,000 * 90%)	18,000
Cost per unit (Rs.) (2,520,000 ÷ 12,000)	140
Abnormal loss (18,000 - 17,500)	500
<b>Value of abnormal loss (Rs.) (140 x 500)</b>	<b>70,000</b>

## 2.4

Relevant Learning outcome : 2.2.1

Calculate variations under addition, subtraction, multiplication and division. Estimate maximum error in profit when price, quantity, variable cost per unit and fixed costs are subject to error.

Study Text reference: Page No. 28

(i)

Revenue without error =  $40,000 \times 80 = 3,200,000$

Highest/ Biggest revenue =  $45,000 \times 85 = 3,825,000$

**Maximum absolute error = Rs. 625,000**

(ii)

	<b>Rs.</b>
Fuel cost = 20+15%	= 23.00
Labour cost = 25+5%	= 26.25
Other direct cost = 10+10%	= <u>11.00</u>

**Maximum cost per kilometer = 60.25**

(iii) Maximum absolute error in the total cost

$(45,000 \times 60.25) - (40,000 \times 55)$

**= Rs. 511,250 ½**

## 2.5

Relevant Learning outcome : 2.5.1

Demonstrate a basic understanding of sampling (simple random sampling and large samples only), sampling distribution of sample mean and sample proportion, and use of confidence intervals in business including their interpretation.

Study Text reference: Page No 327

		Working
(i)	<ul style="list-style-type: none"> <li>• Proportion</li> </ul>	$= (360-315)/360$ $= \underline{\underline{12.5\%}}$
	<ul style="list-style-type: none"> <li>• SEP</li> </ul>	$SEP = \sqrt{\frac{p(1-p)}{n}}$ $= \sqrt{0.125(1-0.125)/360}$ $= \underline{\underline{0.01704 \text{ or } 1.74\%}}$
(ii)	Range at the 99% confidence level	$= 0.125 \pm 0.0174 \times 2.58$ $= 0.125 - 0.0449 \text{ to } 0.125 + 0.0449$ $= 0.0801 - 0.1699$ $\underline{\underline{8.01\% \text{ to } 16.99\%}}$

## 2.6

Relevant Learning outcome : 4.1.1  
Calculate simple and compound interest, effective rate of interest, the yield amount when the rate of interest changes with time, regular investment interest, and amortisation schedule.

Study Text reference: Page No. 420

Monthly interest rate = $15\%/12 = 1.25\%$	
No. of instalments = $4*12 = 48$	
$4,000,000 = \frac{1.0125 A (1.0125^{48} - 1)}{(1.0125 - 1)}$	
$4,000,000 = 66.0437 A$	
<b>A = Rs. 60,565.92</b>	

## 2.7

Relevant Learning outcome : 6.1  
Revenue, costs and profit

Study Text reference: Page No. 558

$P = a - bQ$   
 $b = 50/20$   
 $a = 500 + (50*240/20) = 1,100$   
 $P = 1,100 - 50/20Q$   
 Full capacity =  $240/80\% = 300$  hours  
 When  $Q = 300$  hours  
 $P = 1,100 - 50/20(300)$   
 $P = \text{Rs. } 350$

## 2.8

Relevant Learning outcome : 6.2  
Profit maximisation and cost minimisation

Study Text reference: Page No. 568

Total revenue function = $P * Q$	$TR = 7,600Q - 5Q^2$
Derive MR= first gradient of TR	$MR = 7,600 - 10Q$
	$MC = 2,800$
MC=MR at maximum profit	$2,800 = 7,600 - 10Q$ $Q = 480$ bags
Quantity at current selling price	$4,500 = 7,600 - 5Q$ $Q = 620$
Change in quantity	$(620 - 480) = 140$

## 2.9

Relevant Learning outcome : 7.2.2 Revenue, costs and profit	
Study Text reference: Page No. 656	
Item	Working
Cost adjusted for inflation	$= 2,080,000/1 = 2,080,000$ $= 2,134,000/1.1 = 1,940,000$ $= 2,917,600/1.12 = 2,605,000$
Applying high-low method	Unit difference = $6,800 - 4,900 = 1,900$ units  Cost difference = $2,605,000 - 1,940,000 = \text{Rs. } 665,000$ VC = $665,000/1,900 = \text{Rs. } 350$ FC = $2,605,000 - 350 \times 6,800 = \text{Rs. } 225,000$
Linear equation	No of units taken as = X <u><b>Total cost = Rs. 350X + Rs. 225,000</b></u>

## 2.10

Relevant Learning outcome : 7.3.1 Prepare functional and cash budgets (only understanding of matter budget is expected)	
Study Text reference: Page No. 596	
Working	<b>Amount (Rs.)</b>
Selling price = $125 \times 120\% = \text{Rs. } 150$	
(i) Cash sales = $6,300 \times 150 \times 75\%$	708,750
Debtor collection = $4,500 \times 150 \times 25\%$	168,750
(ii) Supplier advance payment = $5,500 \times 125 \times 50\%$	(343,750)
Supplier balance payment = $6,300 \times 125 \times 50\%$	(393,750)

## SECTION 2

### Answer 03

Relevant Learning Outcome/s: 1.3.1 Explain types of remuneration (time based, piece based and incentive schemes) and accounting for cost of labour (including flexible working and labour turnover). Study Text reference: Page No. 172/175/177
---

(a) Minimum guaranteed payment

	Computation	Rs.
Basic pay	1,200	1,200
Overtime premium	$(1,200/8) * 1.5 * (12-8) = 225 * 4$	900
Minimum payment per member		2,100
Minimum daily payment	$= 2,100 * 40$	<b>84,000</b>

(b) Daily payment and conversion cost

Daily units (kg)	Labour pay (Rs.)	Overhead pay (Rs.)	Total pay (Rs.)	Unit conversion cost (Rs.)
5,040	$5,040 * 50/3 = 84,000$	$40 * 12 * 150 = 72,000$	156,000	$156,000 / 5,040 = 30.95$
3,600	$3,600 * 50/3$ Minimum = 84,000	72,000	156,000	$156,000 / 3,600 = 43.33$
7,200	$7,200 * 50/3$ $= 120,000$	72,000	192,000	$192,000 / 7,200 = 26.27$

(c)

(i) Productivity ratio

Output level	Planned/Budgeted Hours	Actual Hours	Productivity
3,600	300	480	$= 300/480 = \underline{62.5\%}$
7,200	600	480	$= 600/480 = \underline{125\%}$

Or

Out put	No. of units that should be made	Productivity
3,600	$480 \text{ hrs} * 12 = 5,760$	$= 3,600 / 5,760 = \underline{62.5\%}$
7,200	$= 5,760$	$= 7,200 / 5,760 = \underline{125\%}$

(ii) Capacity ratio

Hours worked	Hours budgeted	Capacity ratio= hours worked/hours budgeted
480	480	$480/480 = \underline{100\%}$
480	480	$480/480 = \underline{100\%}$

(Total 10 Marks)



**Answer 04**

Relevant Learning Outcome/s: 2.4

Profitability in business

Study Text reference: Page No. 278/292

(a)

Sales quantity	Variable cost per unit (Rs.)	Contribution (Rs. million)	Fixed cost (Rs. million)	Profit (Rs. million)	Joint probabilities	Expected value (Rs. million)
150,000	320	27	16	11	0.18	1.98
150,000	300	30	16	14	0.12	1.68
165,000	320	29.7	16	13.7	0.36	4.932
165,000	300	33	16	17	0.24	4.08
170,000	320	30.6	16	14.6	0.06	0.876
170,000	300	34	16	<u>18</u>	<u>0.04</u>	<u>0.72</u>
				<b>88.3</b>	1.00	<b>14.268</b>

**Alternative answer**

(a)

Sales quantity	Variable cost per unit (Rs.)	Contribution (Rs. million)	Fixed cost (Rs. million)	Profit (Rs. million)	Joint probabilities	Expected value (Rs. million)
150,000 (0.3)	320 (0.6)	$180 * 150,000 = 27$	16	11	0.18	1.98
	300 (0.4)	$200 * 150,000 = 30$	16	14	0.12	1.68
165,000 (0.6)	320 (0.6)	$180 * 165,000 = 29.7$	16	13.7	0.36	4.932
	300 (0.4)	$200 * 165,000 = 33$	16	17	0.24	4.08
170,000 (0.1)	320 (0.6)	$180 * 170,000 = 30.6$	16	14.6	0.06	0.876
	300 (0.4)	$200 * 170,000 = 34$	16	18	0.04	0.72
				<b>88.3</b>	<b>1.00</b>	<b>14.268</b>

(b)

- (i) Expected profit in the next year without advertising:  
=  $(100,000 * 500 - 100,000 * 300) - 10$  million  
= 10 million (0.4)  $\longrightarrow$  4 million  
=  $(100,000 * 500 - 100,000 * 320) - 10$  million  
=  $(\frac{1}{2})$  8 million (0.6)  $\longrightarrow$  4.8 million

Total = Rs. 8.8 million

Expected profit with the advertising campaign = Rs. 14.268 million

Increase in profit due to advertising = Rs. 5.468 million

Therefore, advertising campaign could be recommended for the next year.

### Alternatively

Variable cost =  $320 * (0.6) + 300 * (0.4) = 312$

Contribution =  $(500 - 312) 100,000 =$  Rs. 18.8 million

Less: Fixed cost = (Rs. 10 million)

Profit = Rs. 8.8 million

Expected profit with the advertising campaign = Rs. 14.268 million

Increase in profit due to advertising = Rs. 5.468 million

Therefore advertising campaign could be recommended for the next year.

- (ii) Probability that the profit will be more than Rs. 14 million would be:

0.34

**(Total: 10 marks)**

**Answer 05**

Relevant Learning Outcome/s: 4.2.3 Calculate Payback, ARR, NPV and IRR under simple cash flow projects. Study Text reference: Page No. 445/449/459
--

(a.)

	<b>Amount (Rs. ' 000)</b>	<b>DF</b>	<b>PV (Rs. ' 000)</b>
Initial investment	(50,000)	1	(50,000)
Sale of land at the end of tenure	20,000	0.1827	3,654
Cost of operation - 1-5	(800)	3.6048	(2,884)
- 6-15	(2,000)	5.6502 X 0.5674	(6,412)
Capital investment	(15,000)	0.5674	(8,511)
Scrap value recovery	5,000	0.1827	914
Harvesting income	22,000	5.6502 X 0.5674	<u>70,530</u>
<b>NPV</b>			<b><u>7,291</u></b>

$$IRR = a\% + \left[ \frac{NPV_A}{NPV_A - NPV_B} \times (b - a) \right] \%$$

$$IRR = 12\% + \left[ \frac{7,291}{7,291 + 23,097} \times (20\% - 12\%) \right]$$

$$IRR = 12\% + 1.92\%$$

**IRR = 13.92%**

(b)

IRR method indicates that a project is viable if the IRR exceeds the minimum acceptable rate of return. (**½ mark**) Here the alternative project exceeds the IRR of project in evaluation by 1.08% (15-13.92). (**1 mark**) Hence, the alternative project is more attractive.

(c)

Payback period measures how long an investment takes to recover the initial cash spending of an investment. It can be considered as an effective measure of investment risk.
When companies are in cash flow difficulties earlier cash recovery is very much important. Lower pay back means, early recovery of investment. However, payback does not measure the value or the expected return on investment that it would provide. It ignores all cash flows and returns once the payback is achieved.
When the project's expected cash flows are difficult to measure reliably and runs for many future years, payback could be used to decide whether to accept or not.
Most companies use payback as an initial evaluation method and if the payback period is below the expected time period, the investment is evaluated following other technical methods.

## Answer 06

Relevant Learning Outcome/s : 7.4.1
Prepare budgetary control statement (fixed/flexed/actual/variance)
Study Text reference: Page No 610/621/622

### (i) Flexible budget

	Working	Flexible (Units 1,200)
Activity levels	Budgeted= 525,000/ 350 = 1,500 units Actual = 438,000/365 = 1,200 units	
Sales revenue	= 525,000/1,500 * 1,200	420,000
<u>Cost of sales</u>		
Material	= 180,000/1,500 *1,200	144,000
Labour	=135,000/1,500 *1,200	108,000
Other direct costs	= 37,500 /1,500*1,200	30,000
Other variable costs	=24,000/1,500*1,200	<u>19,200</u>
		118,800
Office administrative costs		36,000
Selling & distribution costs	= (57,000-51,400)/(1,500-800) = Vc= 8 Fc= (57,000- (1,500*8)) = Fc 45,000 = 1,200*8 +45,000	54,600
<b>Profit</b>		<b>28,200</b>

### (ii) Re-computed variances

Item	Actual (Rs.)	Flexed (Rs.)	Variance (Rs.)
Sales revenue	438,000	420,000	18,000 F
<u>Cost of sales</u>			
Material	(140,000)	(144,000)	4,000 F
Labour	(130,400)	(108,000)	(22,400) A
Other direct	(38,000)	(30,000)	(8,000) A
Other variable costs	<u>(18,500)</u>	<u>(19,200)</u>	<u>700F</u>
	111,100	118,800	(7,700)A
Office administrative costs	(42,000)	(36,000)	6,000A
Selling & distribution costs	<u>(52,000)</u>	<u>(54,600)</u>	<u>2,600F</u>
Profit	<b>17,100</b>	<b>28,200</b>	<b>11,100A</b>

- (b)
  - (i) Fixed budget is designed to remain unchanged regardless of the volume of output or sales achieved.
  - (ii) Every business is dynamic and actual volumes of output cannot be expected to conform exactly to the fixed budget.
  - (iii) Corrective actions may not be designed if the actual performances are not compared with what exactly should have been at the achieved level of performance.
  - (iv) Budget holders may get dissatisfied if their evaluations are performed on the variances occurred beyond their inefficiencies. Fixed budgets do not provide quality information about how bad or good the actual performance was.

## SECTION 3

### Answer 07

Relevant Learning Outcome/s : 5.1.1/5.1.2/3.1.3

5.1.1 Define standard costing (should compare standards vs budgets) and types of standards.

5.1.2 The applicability of standard costing to organisations (with special reference to the difficulties involved in implementing standard costing to service organisations and modern organisations)

3.1.3 Prepare profit statements under both absorption and marginal costing, and the profit reconciliation statement.

Study Text reference: Page No. 481/473/482/378/384

(a)

- Budgets give planned total aggregate costs for a function or a cost centre where as standards show the unit resource usage for a single task such as standard labour hours for a single unit of production.
- Budgets can be prepared for all functions even where output cannot be measured. However, standards are limited to situations where repetitive actions are performed and output can be measured.
- Budgets are basically expressed in money terms whereas standards need not be expressed in money terms.
- Budget is a quantified monetary plan for a future period which managers will achieve, where a standard is a carefully predetermined quantity target which can be achieved under certain conditions.

(b)

- For the valuation of inventories and cost of production for cost accounting purposes.
- To act as a control device in standard costing and variance analysis.

(c)

- Use of advanced technology reduces the usage of labour in the production by a high proportion in labour intensive manufacturing systems. Therefore, the importance of standard costing is minimal in highly technological manufacturing systems.
- Theoretically material usage variances should be virtually non-existent in automated manufacturing systems, provided the accuracy of machines as opposed to human operators.
- Standard costing tends to focus on how to control costs whereas in a modern and competitive business environment the focus should be on quality and continuous improvement. Setting standards indicates to staff that merely achieving the standard is sufficient, however businesses should be focused on improving to increase their competitive advantage.
- Standards can quickly become out of date in the modern environment as technology and customer demands change rapidly.

(d) (i)

<b><u>Absorption costing system</u></b>	
FPOH absorption rate per unit = 7,500,000/100,000	Rs. 75
Variable cost	Rs. 350
Unit cost	Rs. 425
<b><u>Profit computation</u></b>	<b>(Rs. '000)</b>
Sales	57,000
<b><u>Cost of sales</u></b>	
Variable cost (425*95,000)	(40,375)
	16,625
Over absorption (105,000 (W1) - 100,000)*75	375
<b>Profit for the month</b>	<b>17,000</b>
W1 = Production = (15,000-5,000+95,000)	105,000
<b><u>Marginal costing system</u></b>	
<b><u>Profit computation</u></b>	<b>(Rs. '000)</b>
Sales	57,000
<b><u>Cost of sales</u></b>	
Variable cost (350*95,000)	(33,250)
	23,750
Fixed production overheads	(7,500)
<b>Profit for the month</b>	<b>16,250</b>

Alternatively

		<b>Absorption costing (Rs.)</b>		<b>Marginal costing (Rs.)</b>
Sales (95,000 *600)		57,000,000		57,000,000
<b>Opening inventory:</b>	2,125,000			
Absorption-(5,000 *425)			1,750,000	
Marginal-(5,000 * 350)				
<b>Production:</b>	44,625,000			
Absorption- (105,000 1/2 * 425)			36,750,000	
Marginal- (105,000 * 350)				
<b>Closing inventory:</b>	(6,375,000)			
Absorption- (15,000 *425)			(5,250,000)	
Marginal- (15,000 * 350)				
Cost of sales		(40,375,000)		(33,250,000)
		16,625,000		23,750,000
Over absorption of production		375,000		-
<b>Profit</b>		<b>17,000,000</b>		23,750,000
Fixed production overheads				(7,500,000)
<b>Profit</b>				<b>16,250,000</b>



(ii)

Profit as per marginal costing		16,250
Closing inventory	15,000	
Less: Opening inventory	<u>(5,000)</u>	
Increase in inventory	<u>10,000</u>	
Fixed overhead increase in the movement		
Inventory (10,000*75)		<u>750</u>
Profit as per absorption costing		17,000

## 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).

---