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THE INSTITUTE OF
CHARTERED ACCOUNTANTS
OF SRI LANKA

SUGGESTED SOLUTIONS

05204 – Fundamentals of Management Accounting and Business Finance

Certificate in Accounting and Business II Examination

March 2013

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF SRI LANKA

Answer No. 01

	Product A	Product B
(a) Selling price (Rs)	300	420
Total raw material cost (Rs)	50	60
Direct labour cost (Rs)	40	80
Direct expenses - variable (Rs)	56	50
Contribution per unit	154	230

- (i) If the sales potential is limited ranking should be based on contribution per unit

	Product A	Product B
Contribution per unit	154	230
Rank	2	1
Product Mix	4000	6000

- (ii) If total sales in value is limited ranking should be based on C/S Ratio

	Product A	Product B
C/S Ratio	51.3%	54.8%
Rank	2	1
Product Mix	3000	6000
Sales Value (Rs '000)	900	2520

- (iii) If RM X is in short supply ranking should be based on contribution per unit of RM X

	Product A	Product B
Consumption of RM X (Kg)	2	3
Contribution per 1kg of RM X (Rs.)	77.00	76.67
Rank	1	2
Product Mix	6000	4,000
RM X consumption (Kg)	12,000	12,000

- (iv) If Machine hours is limited ranking should be based on contribution per machine hour

	Product A	Product B
Consumption of machine hrs	3	4
Contribution per machine hr	51.33	57.50
Rank	2	1
Product Mix	2000	6,000
Machine hr consumption	6,000	24,000

(8 marks)

	Product A	Product B
Consumption of labour hrs	1	2
Contribution per labour hr	154	115
Rank	1	2

Ranking of the products in respect of both RM X and Labour is same.
Therefore A is ranked 1 and B as 2

When labour constraint is considered in isolation

	Product A	Product B
Product Mix	6000	5,000
Labour hr consumption	6,000	10,000

When RM X constraint is considered in isolation (see a-iii)

Product Mix	6000	4,000
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When both constraints are applicable, Product B has to be limited to the lower quantity

Therefore product mix	6000	4,000
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Therefore the profit = $6000 \times 154 + 4000 \times 230 - 420,000 = \text{Rs } 1,424,000$

(Note - though 16,000 labour hours are available usage is only 14,000)

(3 marks)

	Product A	Product B
Ranking on direct labour	1	2
Ranking on machine hours	2	1

Since rankings are contradicting LP(G) need to be applied

Let the number of units of A and B to be a and b respectively

Object function: Maximise $154a + 230b$

Labour constraint:	$a + 2b \leq 16000$	a=0; b=? 8000	b=0; a=? 16000
M/c hr constraint:	$3a + 4b \leq 30000$	7500	10000
Demand:	$0 \leq a \leq 6000$		
	$0 \leq b \leq 6000$		

PQRS is the feasible area

Evaluation of corner points	P	Q	R	S
# units of A	0	2000	6000	6000
# units of B	6000	6000	3000	0
Total Contribution (Rs '000)	1380	1688	1614	924

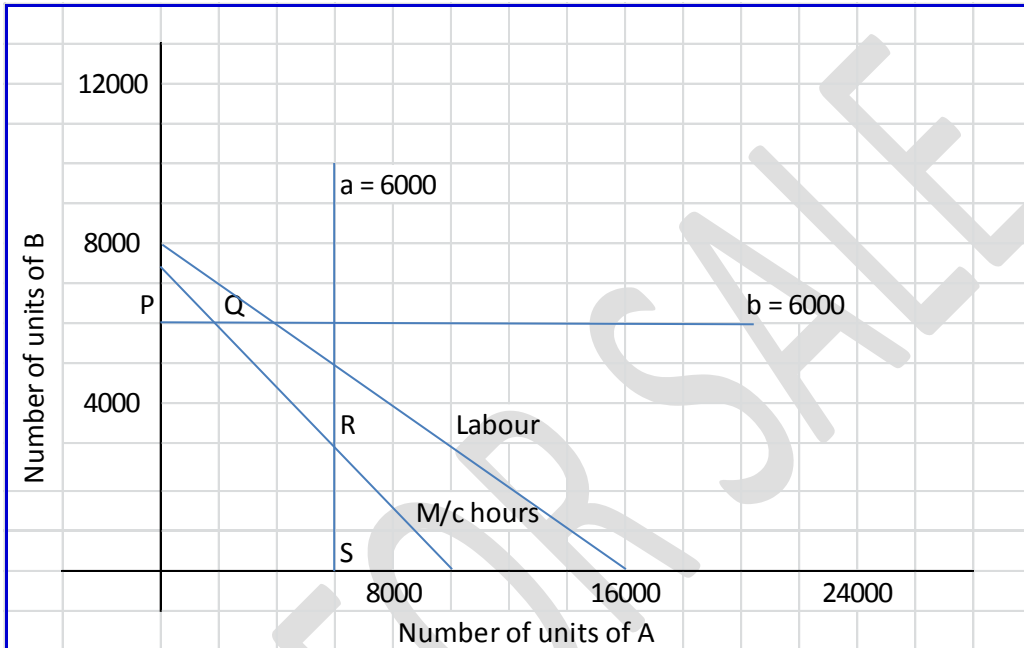
(3)

Accordingly the optimum point is Q where $a=2000$ and $b = 6000$
Therefore optimum product mix is 2000 of A and 6000 of B

Profit at this point is

$$2000 \times 154 + 6000 \times 230 - 420,000 = \text{Rs } 1,268,000$$

Note: Labour consumption is only $2000 \times 1 + 6000 \times 2 = 14000$



(9 marks)
(Total 20 marks)

Answer No. 02

- (a) No. of packs manufactured during February 2013

Using the finished goods inventory adjustment

Value of inventory adjustment (Rs.)	2,565,000.00
Per unit cost (W1)	513.00
No. of packs in the inventory ad.	5,000.00

Since this is a deduction from the production cost, produced quantity is higher than the sales.

Therefore packs produced is (105,000 + 5,000) 110,000

(2 marks)

<u>W1 = Per unit standard cost</u>		<u>Rs.</u>
Material	363.60mn /1.2mn packs	303.00
Labour	48mn/1.2 mn packs	40.00
VOH	60mn/1.2 mn packs	50.00
FOH	144mn/1.2 mn packs	<u>120.00</u>
Total		<u>513.00</u>

Alternative Answer

Using FOH absorbed to production

Fixed overhead absorbed to production	13.20
Per pack FOHs (144,000,000/1,200,000)	<u>120.00</u>
Therefore packs produced	<u>110,000.00</u>

(b) Act. Qty x Act Price	=	34,782,000
Mat. Price Variance	=	1,122,000 A
Act. Qty x Std Price	=	33,660,000
Std. Qty x Std Price	303 x 110,000 =	33,330,000

(i) Material usage variance = (Std Qty - Act Qty) Std price
= 33,330,000 - 33,660,000 = (330,000) **Adv**

(ii) Labour rate variance = (Std rate - Act rate) Act hours
= (240 - 240) *22,000 = Nil

(iii) Labour efficiency variance = (Std hours - Act hours) Std rate
= (110,000*200,000/1,200,000 - 22,000) *240 = (880,000) **Adv**

(iv) Variable Overheads exp. Variance = (Std OH for Act hours - Act VOH)
 = $(22,000 \times (60\text{mn}/200,000\text{hrs}) - 6,820,000)$
 = **(220,000) Adv**

(v) VOH efficiency variance = (Std hour for Act output - Actual hours) Std rate
 = $(110,000 \times (200,000/1.2\text{mn}) - 22,000) \times 300$
 = **(1,100,000) Adv**

(vi) FOH expenditure variance = Btd OH - Actual OH.
 Actual Overhead incurred = $(13.2\text{mn} - 1.3\text{mn}) = \mathbf{11,900,000}$
 = $(12,000,000 - 11,900,000) = \mathbf{100,000 Fav}$

(vii) FOH volume variance = Std FOH/unit (Act output - Btd Output)
 = $120 (110,000 - 100,000) = \mathbf{1,200,000 Fav}$

(viii) Selling price variance = Act sales (Act price- std price)
 = $105,000 (740 - 730) = \mathbf{1,050,000 Fav}$

(ix) Sales margin volume variance = std margin (Act sales - Btd sales)
 = $(730-513) (105,000 - 100,000) = \mathbf{1,085,000 Fav}$

(12 marks)

- (c) *
- * Employee motivation towards achievement.
 - * Areas of inefficiencies can be identified and corrective actions can be taken.
 - * Assist for evaluation of performance of the organisation.
 - * Evaluating the performance of the staff and variances can be used as a criterion for rewarding them.
 - * Assist in planning by forecasting needs
 - * Assist pricing decisions.

(3 marks)

- (d) *
- * The machinery should be maintained properly to ensure that no labour time is wasted.
 - * Proper division of labour and production scheduling
 - * Avoid using inferior quality materials so that minimising production defects.
 - * Continuous supply of Materials to run the machines to the expected level.
 - * Good working environment
 - * Providing proper training to the staff on machinery.
 - * Supervision of work
 - * Employee incentives and other motivational schemes to increase the productivity

(3 marks)

(Total 20 marks)

Answer No. 03

(a)

- (i) Re-order stock level = Max rate of consumption x Max Lead time
= 1600 x 5
= 8000
- (ii) Maximum stock level = ROL + ROQ - Min rate of consumption x Min lead time
= 8000 + 6000 - 1200 x 2
= 11600
- (iii) Minimum stock level = ROL - Avg rate of consumption x Avg lead time
= 8000 - 1400 x 4
= 2400
- (iv) Average stock level = (Max stock level + Min stock level) / 2
= (11600 + 2400) / 2
= 7000

(3 marks)

(b)

(i)

Date	Ref	Receipts			Issues			Balance		
		Qty	Rate	Amount	Qty	Rate	Amount	Qty	Rate	Amount
Dec-01	Balance							10,000	10.00	100,000
Dec-07	GRN #	4,000	12.50	50,000				10,000	10.00	100,000
								4,000	12.50	50,000
Dec-14	GRN #	6,000	15.00	90,000				10,000	10.00	100,000
								4,000	12.50	50,000
								6,000	15.00	90,000
Dec-16	MRN #				10,000	10.00	100,000			
					4,000	12.50	50,000			
					2,000	15.00	30,000	4,000	15.00	60,000
Dec-24	GRN #	8,000	16.50	132,000				4,000	15.00	60,000
								8,000	16.50	132,000
Dec-28	MRN #				4,000		60,000			
					6,000	15.00	99,000	2,000	16.50	33,000

(7 marks)

- (ii) Dec-16 WA value of stock = (100000 + 50000 + 90000)/20000 = 12
Dec-16 Bal after Issues = 4000 x 12 = 48000
Dec-28 WA value of stock = (48000 + 132000)/12000 = 15
Dec-28 Bal after Issues = 2000 x 15 = Rs. 30000

(2 marks)

(iii) **Advantages**

- (a) Simple in application
- (b) It adheres to costing principles as the materials are charged to production at actual cost paid for them
- (c) Accounting flow and physical flow of the material are same
- (d) The value of closing stock is close to the current market prices
- (e) This is a recommended method as per Accounting Standards

Disadvantages

- (a) This method requires either a computer system or excessive labour which could be costly
- (b) Cost of similar jobs executed on the same day may not be the same because materials have been taken from different lots
- (c) Under the conditions of rising / declining prices the costs will not reflect current market conditions

(3 marks)
(Total 15 marks)

Answer No. 04

(a)

Contract Account					
	A	B		A	B
Stores	1,350.00	21,000.00	Transfer of material - A	-	200.00
Transfer of material - B	200.00	-	Material returned to stores	100.00	350.00
Labour Cost	580.00	3,600.00	Material on site c/f	150.00	2,000.00
Labour Cost payable	60.00	800.00	Material loss	-	50.00
Other overheads	250.00	1,300.00	Cost of work not certified c/f	50.00	100.00
Depreciation	10.00	900.00	Cost of work certified	2,150.00	24,900.00
	2,450.00	27,600.00		2,450.00	27,600.00
Cost of work certified	2,150.00	24,900.00	P&L Account/Cost (W2)	2,300.00	24,480.00
Balance C/F	150.00		Balance C/F	-	420.00
	2,300.00	24,900.00		2,300.00	24,900.00

(W1) Calculation of profit from Contracts

	A	B
Contract price	4,200.00	57,500.00
Cost of work certified	(2,150.00)	(24,900.00)
Cost of work not certified	(50.00)	(100.00)
Further cost to be incurred	(2,200.00)	(26,000.00)
Contract profit/(loss)	(200.00)	6,500.00

(W2) Calculation of degree of completion and profit/(loss) - Sales Value Method

	A	B
Value certified		27,600.00
Contract price		57,500.00
Degree of completion		48.00%
Profit or loss up to 31 Dec 2012	(200.00)	3,120.00

Since contract A generates a loss, total loss should be charged to the Profit & Loss in full for the period

Cost to be transferred to P&L Account = $27600 - 3120 = 24,480$ -----> Contract B

Cost to be transferred to P&L Account = $2100 + 200 = 2,300$ -----> Contract A

Calculation of degree of completion (Alternative answer) - Cost Method

	A	B
Cost incurred		25,000.00
Further cost		26,000.00
Total cost to complete		51,000.00
Degree of completion		49%
Profit or loss up to 31 Dec 2012	(200.00)	3,186.27

Please note: Either method could be used to calculate the degree of completion. However Contract Account has been based on the Sales Value method. Adjustment should be required to the profit and attributable sales revenue if the Cost method is used.

(12 marks)

(b) * Contract costing takes relatively longer period of time (normally in excess of one year) whereas completion of a Job is shorter.

* Contract costing is applied to large cost units whereas cost of job costing is relatively lower.

* Since completion time of contract costing is longer it is required to calculate the degree of completion to recognise the profit or loss from the contract for a financial year. Job costing allows to recognise the profit or loss at the completion of the job.

(3 marks)

(Total 15 marks)

Answer No. 05

(a)

million

	Year 00	Year 01	Year 02	Year 03	Year 04	Year 05
Machinery	(450.00)	-	-	-	-	25.00
Cost saving (W1)	-	70.00	77.18	88.20	91.88	95.55
Sale of by-product (W2)	-	64.00	67.20	76.80	80.00	83.20
Contract workers	-	(0.80)	(0.80)	(0.80)	(0.80)	(0.80)
Technician	-	(0.60)	(0.60)	(0.60)	(0.60)	(0.60)
Premises	-	(2.00)	(2.00)	(2.00)	(2.00)	(2.00)
Other operational costs	-	(5.00)	(7.00)	(9.00)	(10.00)	(12.00)
Net cash flow	(450.00)	125.60	133.98	152.60	158.48	188.35
DF @ 15%	1.00	0.870	0.756	0.658	0.572	0.497
Disc. Cash flow	(450.00)	109.27	101.29	100.41	90.65	93.61
NPV	45.23					

(11 marks)

W1 - Cost savings

	Year 00	Year 01	Year 02	Year 03	Year 04	Year 05
Waste MTs	-	20,000.00	21,000.00	24,000.00	25,000.00	26,000.00
Disposal cost per MT	-	3,500.00	3,675.00	3,675.00	3,675.00	3,675.00
Total cost savings (million)		70.00	77.18	88.20	91.88	95.55

W2 - Sale of by product

	Year 00	Year 01	Year 02	Year 03	Year 04	Year 05
By product Qty MT (80%)	-	16,000.00	16,800.00	19,200.00	20,000.00	20,800.00
Price per MT	-	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
Total cost savings (million)		64.00	67.20	76.80	80.00	83.20

Notes

- * Cost of feasibility study is a sunk cost
- * Salary of the technician Rs. 520,000 is irrelevant since it is not an incremental cost.
- * Apportioned cost of the car park is not relevant since it is unavoidable or not an incremental cost.

(b)

Computation of IRR						
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Net cash flow	(450.00)	125.60	133.98	152.60	158.48	188.35
Discounting rate @ 20%	1.000	0.833	0.694	0.579	0.482	0.402
Disc. Cash flow	(450.00)	104.62	92.98	88.36	76.38	75.72
NPV	(11.94)					

<u>NPV</u>	<u>DR</u>
45.23	15%
(11.94)	20%
57.17	5%

$$\text{IRR} = 15\% + (5\%/57.17)*45.23 = \quad \mathbf{19.0\%}$$

Interpretation of IRR

The net cash flow of the above project when discounted at 19% the NPV become 0. Accordingly the project's return is more than the cost of capital of the company, therefore, the project is feasible

(2 marks)

(c)

- * IRR method cannot be guaranteed to rank mutually exclusive projects correctly.
- * The percentage return generated by the IRR method can be misleading when choosing between alternatives.
- * IRR method makes incorrect reinvestment assumptions by assuming that the interim cash flows can be reinvested at IRR rather than cost of capital
- * Multiple IRRs are possible with unconventional cash flows exist in a project cash flows.

(2 marks)

Answer No. 06

(a)

Production (Units)

	2013	2013	2013	2014
	April-June	July-Sep	Oct-Dec	Jan-Mar
Product A				
Sales	84,000	88,200	93,000	96,000
Add: Closing stock	14,700	15,500	16,000	16,800
Less: Opening stock	(14,000)	(14,700)	(15,500)	(16,000)
Production	84,700	89,000	93,500	96,800
Product B				
Sales	63,000	66,000	67,800	69,000
Add: Closing stock	11,000	11,300	11,500	12,000
Less: Opening stock	(10,500)	(11,000)	(11,300)	(11,500)
Production	63,500	66,300	68,000	69,500

(6 marks)

(b)

Material X Purchase budget (in Kgs)				
	April	May	June	Total
Product A				
Sales	28,000	28,000	28,000	
+ Closing stock	14,000	14,000	14,700	
- Opening stock	(14,000)	(14,000)	(14,000)	
Production	28,000	28,000	28,700	
Product B				
Sales	21,000	21,000	21,000	
+ Closing stock	10,500	10,500	11,000	
- Opening stock	(10,500)	(10,500)	(10,500)	
Production	21,000	21,000	21,500	
Material X Purchase Budget in values				
Product A	77,000	77,000	78,925	
Product B	80,850	80,850	82,775	
Total requirement	157,850	157,850	161,700	
Add: Closing stock	31,570	32,340	33,110	
Less: Opening stock	(31,570)	(31,570)	(32,340)	
To be purchased (kg)	157,850	158,620	162,470	478,940
Purchase in value (Rs.)	31,570,000	31,724,000	32,494,000	95,788,000

(7 marks)

(c) **Purposes of budgeting**

- Δ To plan the operation in advance
- Δ To coordinate the activities of various parts of an organisation for a common organisational goal.
- Δ To communicate the plans to the various responsibility centre managers
- Δ To motivate managers to strive to achieve the organisational goals
- Δ To compare the actual results with the budget and to take controlling measures.
- Δ To evaluate the performance of the staff.

(2 marks)

(Total 15 marks)

NOT FOR SALE

Answer No. 07

(a) Basic financial management decision areas are as follows

(i) The investments the organisation should make (Investment decisions)

This is the process of planning and managing firm's investments. This could be long term and short term.

From a long term point of view A FM is concerned about the lines of business that the organisation need to be in, size of the investments, what type of assets would be needed and the timing and risk of future cash flows.

From a short term point of view A FM is concerned in management of a firm's investments in short term assets such as inventories and debtors and short term liabilities such as supply creditors.

(ii) Where will the finances come from (Capital Structure / Financing decisions)

This is the specific mixture of long term debt and equity the firm uses to finance its operations, particularly the long term investments. The mixture will affect both risk and the value of the firm. A FM is concerned with the optimum capital structure and how and where the money is raised from.

At the same time a FM needs to manage its working capital to ensure that the firm has sufficient resources to continue its operations and avoid costly interruptions. He will decide when short term borrowings are required and how it should be obtained to finance working capital deficits.

(iii) Dividend decision

Once the business starts making profits, it is necessary to decide how these profits would be shared among the owners. A FM needs to decide how much profits needs to be retained for future growth and how much should be distributed

(5 marks)

(b) The goal of financial management is to add value to the shareholders and maximise the value of owners' equity. In other words it is to maximise the current stock value.

(1 mark)

(c) (i) When cost of equity is calculated based on dividends it is not just calculated based on the issue price of shares. It is based on the market value of shares and growth also has to be taken in to account as the investors expect a growth in dividends. The best model under the circumstances is dividend growth model where

$$\begin{aligned}\text{Cost of equity} &= D_0(1+g)/MV + g \\ &= 5 (1.05)/50 + 5\% = 15.5\%\end{aligned}$$

Accordingly cost of equity is 15.5% and not 12.5%

- (ii) Since interest on debt is a tax deductible item that tax benefit need to be considered when cost of debt is calculated.

$$\begin{aligned}\text{Cost of debt} &= I \times (1-t)/D \\ &= \frac{10 \times (1 - 28\%)}{80} = 9.0\%\end{aligned}$$

Accordingly cost of debt is only 9.0% and not 12.5%

- (iii) Debt equity ratio can be calculated based on book values as well as on market values where the latter is considered for WACC calculations

When it is calculated on book values, equity should comprise with both stated capital and reserves. Accordingly equity is $(80 + 20) = \text{Rs } 100 \text{ Mn}$. Since debt is Rs 80 Mn, debt equity ratio based on book values is 80:100 or 1: 1.25

When it is calculated on market values, market value of equity is $2,000,000 \text{ shares} \times \text{Rs } 50 = \text{Rs } 100 \text{ Mn}$. Market value of debt is Rs 80 Mn which is as same as the book value. Debt equity ratio on market values is 80:100 or 1:1.25

CEO's computation of debt equity ratio cannot be agreed with based on either of those methods.

$$\text{WACC} = (100 \times 15.5\% + 80 \times 9\%) / (100 + 80) = 12.61\%$$

(9 marks)

(Total 15 marks)

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