



J.K. SHAH[®]
TEST SERIES
Evaluate Learn Succeed

SUGGESTED SOLUTION

CA FINAL MAY 2017 EXAM

ADVANCE MANAGEMENT ACCOUNTING

Test Code - F M J 4 0 0 6

BRANCH - (MULTIPLE) (Date : 11.12.2016)

Head Office : Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.

Tel : (022) 26836666

Answer-1 :

Product H & T are joint products and produced in the ratio of 1:2 from the same direct material- M.
Production of 40,000 additional units of T results in production of 20,000 units of H.

Statement Showing "Contribution under Existing Situation"

Particulars	Amount (Rs.)	Amount (Rs.)
Sales Value:		
H – 2,00,000 units @ Rs. 25 per unit	50,00,000	
T – 4,00,000 units @ Rs. 20 per unit	<u>80,00,000</u>	<u>1,30,00,000</u>
Less: Material- M (12,00,000 units @ Rs. 5 per unit)		60,00,000
Less: Other Variable Costs		42,00,000
Contribution		28,00,000

Let Minimum Average Selling Price per unit of H is Rs. X

(3 Marks)**Statement Showing "Contribution after Acceptance of Additional Order of 'T'"**

Particulars	Amount (Rs.)	Amount (Rs.)
Sales Value:		
H – 2,20,000 units @ Rs. X per unit	2,20,000 X	
T – 4,00,000 units @ Rs.20 per unit	80,00,000	
40,000 units @ Rs.15 per unit	<u>6,00,000</u>	<u>2,20,000 X + 86,00,000</u>
Less: Material- M (12,00,000 units × 110%) @ Rs.5 per unit		66,00,000
Less: Other Variable Costs (Rs.42,00,000 × 110%)		46,20,000
Contribution		2,20,000 X – 26,20,000

Minimum Average Selling Price per unit of H**(3 Marks)**

$$\begin{aligned} \text{Contribution after additional order of T} &= \text{Contribution under existing production} \\ 2,20,000 X - 26,20,000 &= 28,00,000 \\ 2,20,000 X &= 54,20,000 \\ X &= \text{Rs.24.64} \end{aligned}$$

Minimum Average Selling Price per unit of H is Rs. 24.64

(2 Marks)**Answer-2 :****Computation of Cost Indifference Points for three alternatives**

$$\begin{aligned} \text{Cost Indifference Point of two machines} &= \frac{\text{Difference in Fixed Cost}}{\text{Difference in Variable Cost per unit}} \\ \text{Machine } M_1 \& M_2 &= \frac{\text{Rs.2,50,000} - \text{Rs.1,50,000}}{(\text{Rs.100} + \text{Rs.70} + \text{Rs.30}) - (\text{Rs.50} + \text{Rs.40} + \text{Rs.10})} \\ &= \frac{\text{Rs.1,00,000}}{\text{Rs.100}} \\ &= 1,000 \text{ units} \end{aligned} \quad \text{(2 Marks)}$$

$$\begin{aligned} \text{Machine } M_2 \& M_3 &= \frac{\text{Rs.1,50,000} - \text{Rs.70,000}}{(\text{Rs.150} + \text{Rs.200} + \text{Rs.50}) - (\text{Rs.100} + \text{Rs.70} + \text{Rs.30})} \\ &= \frac{\text{Rs.80,000}}{\text{Rs.200}} \\ &= 400 \text{ units} \end{aligned} \quad \text{(2 Marks)}$$

$$\begin{aligned} \text{Machine } M_1 \& M_3 &= \frac{\text{Rs.2,50,000} - \text{Rs.70,000}}{(\text{Rs.150} + \text{Rs.200} + \text{Rs.50}) - (\text{Rs.50} + \text{Rs.40} + \text{Rs.10})} \\ &= \frac{\text{Rs.1,80,000}}{\text{Rs.300}} \\ &= 600 \text{ units} \end{aligned}$$

(2 Marks)

From the above computations, it is clear that at activity level below the indifference point the alternative (machine) with lower fixed cost and higher variable costs should be used. In case the activity level exceeds the indifference point, a machine with lower variable cost per unit (or higher contribution per unit) and higher fixed cost, is more profitable to operate.

At the activity level equal to the indifference point both machines are on equal footing. Hence from the above we conclude as follows:

Activity Level	Machine Preference
Less than 400 units	M ₃
Exactly 400 units	Either M ₂ or M ₃
Above 400 units but less than 1,000 units	M ₂
Exactly 1,000 units	Either M ₁ or M ₂
Above 1,000 units	M ₁

When expected level of activity is 1,200 units i.e. more than 1,000 units, Machine M₁ should be used.

(2 Marks)

Answer-3 :

(i) Computation of Sale Price Per Bottle

Output: 40,000 Bottles

	(Rs.)
Variable Cost:	
Material	2,10,000
Labour (Rs.1,50,000 × 80%)	1,20,000
Factory Overheads (Rs.92,000 × 60%)	55,200
Administrative Overheads (Rs.40,000 × 35%)	14,000
Commission (8% on Rs.6,00,000) (W.N.-1)	48,000
Fixed Cost:	
Labour (Rs.1,50,000 × 20%)	30,000
Factory Overheads (Rs.92,000 × 40%)	36,800
Administrative Overheads (Rs.40,000 × 65%)	<u>26,000</u>
Total Cost	5,40,000
Profit (W.N.-1)	<u>60,000</u>
Sales Proceeds (W.N.-1)	6,00,000
Sales Price per bottle $\left(\frac{\text{Rs.6,00,000}}{40,000 \text{ Bottles}} \right)$	15

(3 Marks)

(ii) Calculation of Break-even Point

Sales Price per Bottle	=	Rs.14
Variable Cost per Bottle	=	$\frac{\text{Rs.4,44,000 (W.N.-2)}}{40,000 \text{ Bottles}}$
	=	Rs.11.10
Contribution per Bottle	=	Rs.14 – Rs.11.10
	=	Rs.2.90
Break -even Point		
(in number of Bottles)	=	$\frac{\text{Fixed Costs}}{\text{Contribution per Bottle}}$
	=	$\frac{\text{Rs.92,800}}{\text{Rs.2.90}} = 32,000 \text{ Bottles}$
Break- even Point		

$$\begin{aligned} \text{(in Sales Value)} &= 32,000 \text{ Bottles} \times \text{Rs.14} \\ &= \text{Rs.4,48,000} \end{aligned}$$

(2 Marks)

Working Note

W.N.-1

Let the Sales Price be 'x'

$$\begin{aligned} \text{Commission} &= \frac{8x}{100} \\ \text{Profit} &= \frac{10x}{100} \\ x &= 4,92,000 + \frac{8x}{100} + \frac{10x}{100} \\ 100x - 8x - 10x &= 4,92,00,000 \\ 82x &= 4,92,00,000 \\ x &= 4,92,00,000 / 82 \\ &= \text{Rs.6,00,000} \end{aligned}$$

(1.5 Marks)

W.N.-2

Total Variable Cost

	(Rs.)
Material	2,10,000
Labour	1,20,000
Factory Overheads	55,200
Administrative Overheads	14,000
Commission [(40,000 Bottles × Rs.14) × 8%]	44,800
Total	4,44,000

(1.5 Marks)

Answer-4 :

(a) Statement Showing "Fixation of the Selling Price of Products A and B"

		Products		Total
		A	B	
Sales (units)	...(A)	1,00,000	2,00,000	
	(Rs.)	(Rs.)	(Rs.)	
Contribution (W.N.-5)	...(B)	19,26,429	25,68,571	44,95,000
Variable Cost (W.N.-2)	...(C)	30,00,000	50,00,000	80,00,000
Sales Value	...(D) = (B) + (C)	49,26,429	75,68,571	1,24,95,000
Selling Price per unit	...(D) / (A)	49.26	37.84	
Direct Labour Hours (W.N.-6)	...(E)	3,00,000 hrs.	4,00,000 hrs.	
Contribution per Labour Hr.	...(B) / (E)	6.42	6.42	

(3 Marks)

(b) Statement Showing "Overall Profit"

	Products		Total
	A	B	
Contribution (W.N.-5)	19,26,429	25,68,571	44,95,000
Less: Fixed Costs			
Factory Overheads	4,50,000	6,00,000	10,50,000
Administration Overheads	3,30,000	5,20,000	8,50,000
Selling & Dist. Overheads	1,50,000	4,00,000	5,50,000
Interest on Term Loan (Rs.40,00,000 × 14%)			5,60,000
Interest on Working Capital (Rs.52,25,000 × 0.5 × 18%)			4,70,250
Profit			10,14,750

(3 Marks)

Working Notes**1. Statement of Variable Cost and Total Cost per unit for each Product**

Particulars	A		B	
	Total Cost	Variable Cost	Total Cost	Variable Cost
Direct Materials	15.00	15.00	14.00	14.00
Direct Labour	9.00	9.00	6.00	6.00
Factory Overheads	9.00	4.50	6.00	3.00
Total Factory Cost	33.00	28.50	26.00	23.00
Adm. Overheads	3.30	—	2.60	—
Selling & Distribution Overheads	3.00	1.50	4.00	2.00
Total	39.30	30.00	32.60	25.00

(1 Mark)

2. Statement of Total Variable Costs and Total Costs

	Variable Costs (Rs.)	Total Cost (Rs.)
Product A - 1,00,000 units	30,00,000	39,30,000
Product B - 2,00,000 units	50,00,000	65,20,000
Total	80,00,000	1,04,50,000

(1 Mark)

3. Computation of Capital Employed

Fixed Capital	(Rs.) 50,00,000
Working Capital (6 months Cost of Sales, i.e. ½ of Rs.1,04,50,000 as per W.N.-2 above)	52,25,000
Total Capital Employed	1,02,25,000

(1 Mark)

4. Expected Return on Capital Employed at 20%

$$\frac{\text{Rs.1,02,25,000} \times 20}{100} = \text{Rs.20,45,000}$$

(1 Mark)

5. Computation of Sales Value and Contribution

	(Rs.)
Total Cost (W.N.-2)	1,04,50,000
Add: Expected Returned	20,45,000
Sales Value	1,24,95,000
Less: Variable Costs (W.N.-2)	80,00,000
Contribution	44,95,000

$$\text{Contribution for Product A} = \text{Total Contribution} \times \frac{\text{Direct Labour Hours for Product A}}{\text{Total Direct Labour Hours}}$$

$$= \text{Rs.44,95,000} \times \frac{3,00,000 \text{ hours}}{7,00,000 \text{ hours}}$$

$$= \text{Rs.19,26,429}$$

$$\text{Contribution for Product B} = \text{Total Contribution} \times \frac{\text{Direct Labour Hours for Product B}}{\text{Total Direct Labour Hours}}$$

$$= \text{Rs.44,95,000} \times \frac{4,00,000 \text{ hours}}{7,00,000 \text{ hours}}$$

$$= \text{Rs.25,68,571}$$

(1 Mark)

6. Total Labour Hours

Product A (1,00,000 units × 3 hrs)	3,00,000
Product B (2,00,000 units × 2 hrs)	4,00,000

Total Direct Labour Hours

7,00,000

(1 Mark)

Answer-5 :

Workings

Units	Average hrs. /unit
1	2,000
2	1,600
4	1,280
8	1,024

Variable Cost excluding Labour:

	Rs.	
Material Cost / unit	= 10,000	
Variable Overheads	= 2,000	
Variable Cost	= 12,000	(1.5 Marks)

Option-I

If both the orders came together, learning rate 80% applies and 8 units can be made, with average time of 1,024 hours per unit.

	Rs.
Cost to AB	= 12,000
Variable Cost excluding Labour	= 12,000
Labour Cost (1,024 hrs. × 4 Rs./hr)	= <u>4,096</u>
	= 16,096

In this case,

(1.5 Marks)

Particulars	Q	P	Total
Selling Price p. u. (Rs.)	17,200	16,500	33,700
Variable Cost p. u. (Rs.)	16,096	16,096	32,192
Contribution p. u. (Rs.)	1,104	404	1,508
No. of Units	4	4	
Contribution (Rs.)	4,416	1,616	6,032

Option- II

(2.5 Marks)

If P Ltd supplies its labour. 80% learning curve will apply to 4 units each of AB & P. Hence: hrs / u = 1,280

Particulars	Q	P	Total
Selling Price p. u. (Rs.)	17,200	14,000	31,200
Variable Cost p. u. (Rs.) (Excluding Labour)	12,000	12,000	24,000
Labour Cost p. u. (Rs.)			
1,280 hrs. ×	Rs.4 5,120	–	5,120
1,280 hrs. × Rs.1	–	1,280	1,280
Total Variable Cost p. u. (Rs.)	17,120	13,280	30,400
Contribution p. u. (Rs.)	80	720	800
Units	4	4	
Contribution (Rs.)	320	2,880	3,200

Decision

AB should not take labour from P Ltd. It should choose Option-I.

(2.5 Marks)

Answer-6 :

(i)

	Part A	Part B
Machine "A" (4,000 hrs)	6,666	16,000
Machine "B" (4,500 hrs)	9,000	8,181
Alloy Available (13,000 kg.)	8,125	8,125
Maximum Number of Parts to be manufactured	6,666	8,125

	(Rs.)	(Rs.)
Material (Rs.12.5 × 1.6 kg.)	20.00	20.00
Variable Overhead: Machine "A"	48.00	20.00
Variable Overhead: Machine "B"	50.00	55.00
Total Variable Cost per unit	118.00	95.00
Price Offered	145.00	115.00
Contribution per unit	27.00	20.00
Total Contribution for units produced	... (I) 1,79,982	1,62,500
Spare Part A will optimize the contribution.		

(3 Marks)

(ii)

	Part A
Parts to be manufactured numbers	6,666
Machine A : to be used	4,000
Machine B : to be used	3,333
Underutilized Machine Hours (4,500 hrs. – 3,333 hrs.)	1,167
Compensation for unutilized machine hours (1,167hrs. × Rs.60)	... (II) 70,020
Reduction in Price by 10%, Causing fall in Contribution of Rs.14.50 per unit (6,666 units × Rs.14.5)	... (III) 96,657
Total Contribution	... (I + II – III) 1,53,345

(3 Marks)