



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

SUGGESTED SOLUTION
IPCC NOVEMBER 2016 EXAM
COSTING
Test Code - I N J 1 0 4 7
BRANCH - (MUMBAI) (Date :21.08.2016)

Head Office : Shraddha, 3rd Floor, Near Chinai College, Andheri (E), Mumbai – 69.
Tel : (022) 26836666

Answer-1 (a) :

$$P/V \text{ Ratio} = \frac{S-V}{S} = \frac{\text{Rs.1,00,000} - \text{Rs.60,000}}{\text{Rs.1,00,000}} \times 100 = 40\%$$

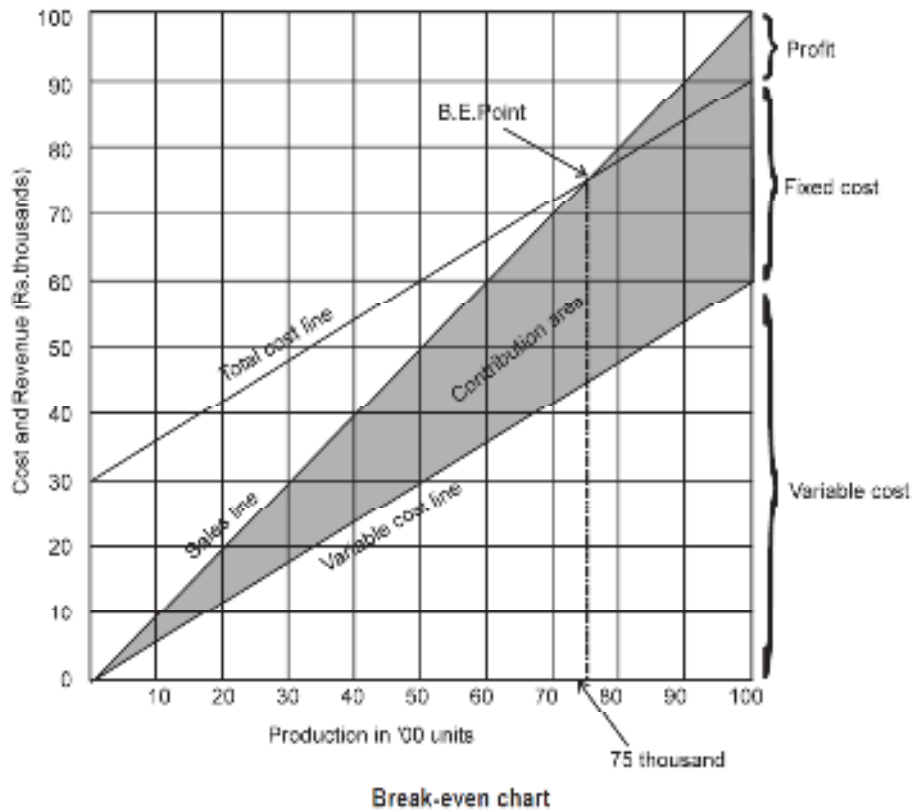
(1 Mark)

$$B/E \text{ Point} = \frac{F}{P/V \text{ Ratio}} = \frac{30,000}{40\%} = \text{Rs.75,000}$$

(1 Mark)

Margin of safety = Actual Sales – BE point= 1,00,000 – 75,000 = Rs. 25,000

Break even chart showing contribution is shown below:



Answer-1 (b) :

(i) Computation of Unit Cost & Total Income

Unit Cost	Absorption Costing (Rs.)	Marginal Costing (Rs.)
Direct Material	16.00	16.00
Direct Labour	54.00	54.00
Variable Overhead	12.00	12.00
Fixed Overhead	18.00	—
Unit Cost	100.00	82.00

Income Statements

Absorption Costing	(Rs.)
Sales (21,500 units × Rs.168)	36,12,000
Less: Cost of goods sold (21,500 × Rs.100)	21,50,000
Less: Over Absorption [Refer to calculation under (ii)]	<u>28,000</u>
	14,90,000
Less: Selling & Distribution Expenses	<u>11,90,000</u>
Profit	<u>3,00,000</u>

(3 Marks)

Marginal Costing**(Rs.)**

Sales (as above)		36,12,000
Less: Cost of goods sold (21,500 units × Rs. 82)	17,63,000	
Add: Under Absorption [Refer to calculation under (ii)]	<u>20,000</u>	<u>17,83,000</u>
		18,29,000
Less: Selling & Distribution Expenses		<u>4,30,000</u>
Contribution		13,99,000
Less: Fixed Factory and Selling & Distribution Overhead(Rs. 38,400 + Rs. 7,60,000)		<u>11,44,000</u>
Profit		<u>2,55,000</u>

(3 Marks)**(ii) Under or over absorption of overhead:**

Budgeted Fixed Overhead	(Rs.)
72,000 hrs. × Rs. 6	4,32,000
Less: Over-absorption	<u>48,000</u>
Actual Fixed Overhead	<u>3,84,000</u>
Budgeted Variable Overhead	
72,000 Hrs. × Rs.4	2,88,000
Add: Under- absorption	<u>20,000</u>
Actual Variable Overhead	<u>3,08,000</u>
Both Fixed & Variable Overhead applied	
72,000 Hrs × Rs. 10	7,20,000
Actual Overhead (3,84,000 + 3,08,000)	<u>6,92,000</u>
Over- Absorption	<u>28,000</u>

(3 Marks)**(iii) Reconciliation of Profit**

Difference in Profit: Rs. 3,00,000 M- =Rs. 2,55,000 = Rs. 45,000
 Due to Fixed Factory Overhead being included in Closing Stock in Absorption Costing not in Marginal Costing.
 Therefore, Difference in Profit = Fixed Overhead Rate (Production ii) -- Sale)
 = Rs.18 (24,000 ii) -- 21,500) = Rs.45,000

(1 Mark)**Answer-2 :****(i) Comparison of alternative Joint-Cost Allocation Methods:****(a) Sales Value at Split-off Point Method**

	Chocolate powder liquor base	Milk Chocolate liquor base	Total
Sales value of products at split off	Rs. 2,99,250*	Rs. 5,55,750**	Rs. 8,55,000
Weights	0.35	0.65	1.00
Joint cost allocated	Rs. 2,49,375 (Rs.7,12,500 × 0.35)	Rs. 4,63,125 (Rs.7,12,500 × 0.65)	Rs. 7,12,500

* (3,000 lbs ÷ 200 lbs) × 20 gallon × Rs. 997.50 = Rs. 2,99,250

** (5,100 lbs ÷ 340 lbs) × 30 gallon × Rs.1,235 = Rs. 5,55,750

(1 Mark)**(b) Physical Measure Method**

	Chocolate powder liquor base	Milk chocolate liquor base	Total
Output	300 gallon*	450 gallon**	750 gallons
Weight	300/750 = 0.40	450/750 = 0.60	1.00

Joint cost allocated	Rs. 2,85,000 (Rs. 7,12,500 x 0.40)	Rs. 4,27,500 (Rs. 7,12,500 x 0.60)	Rs. 7,12,500
----------------------	---------------------------------------	---------------------------------------	--------------

*(3,000 lbs ÷ 200 lbs) × 20 gallon = 300 gallon
 ** (5,100 lbs ÷ 340 lbs) × 30 gallon = 450 gallon

(1 Mark)

(c) Net Realisable Value (NRV) Method

	Chocolate powder liquor base	Milk chocolate liquor base	Total
Final sales value of production	Rs. 5,70,000 (3,000 lbs × Rs.190)	Rs. 12,11,250 (5,100 lbs × Rs. 237.50)	Rs. 17,81,250
Less: Separable costs	Rs. 3,02,812.50	Rs. 6,23,437.50	Rs. 9,26,250
Net realisable value at split off point	Rs. 2,67,187.50	Rs. 5,87,812.50	Rs. 8,55,000
Weight	0.3125 (2,67,187.50 ÷ 8,55,000)	0.6875 (5,87,812.5 ÷ 8,55,000)	1.00
Joint cost allocated	Rs. 2,22,656.25 (Rs. 7,12,500 x 0.3125)	Rs. 4,89,843.75 (Rs. 7,12,500 x 0.6875)	Rs. 7,12,500

(1 Mark)

(d) Constant Gross Margin(%)NRV method

	Chocolate powder Liquor base	Milk chocolate liquor Base	Total
Final sales value of production	Rs. 5,70,000	Rs. 12,11,250	Rs. 17,81,250
Less: Gross margin* 8%	Rs. 45,600	Rs. 96,900	Rs. 1,42,500
Cost of goods available for sale	Rs. 5,24,400	Rs. 11,14,350	Rs.16,38,750
Less: Separable costs	Rs. 3,02,812.50	Rs. 6,23,437.50	Rs. 9,26,250
Joint cost allocated	Rs. 2,21,587.50	Rs. 4,90,912.50	Rs. 7,12,500

*Final sales value of total production = Rs.17,81,250
 Less: Joint and separable cost = Rs. 16,38,750 (Rs. 7,12,500 + Rs. 9,26,250)
 Gross Margin = Rs. 1,42,500
 Gross margin (%) = $\frac{\text{Rs.1,42,500}}{\text{Rs.17,81,250}} \times 100 = 8\%$

(ii) Chocolate powder liquor base

(Amount in Rs.)

	Sales value at Split off	Physical Measure	Estimated net Realisable Value	Constant Gross Margin NRV
Final sale value of Chocolate powder	5,70,000	5,70,000	5,70,000	5,70,000
Less: Separable costs	3,02,812.50	3,02,812.50	3,02,812.50	3,02,812.50
Less: Joint costs	2,49,375	2,85,000	2,22,656.25	2,21,587.50
Gross Margin	17,812.50	(17,812.50)	44,531.25	45,600
Gross Margin %	3.125%	(3.125%)	7.8125%	8.00%

(2 Marks)

Milk chocolate liquor base

(Amount in Rs.)

	Sales value at split off	Physical measure	Estimated net realizable	Constant Gross margin NRV
Final sale value of milkchocolate	12,11,250	12,11,250	12,11,250	12,11,250
Less: Separable costs	6,23,437.50	6,23,437.50	6,23,437.50	6,23,437.50
Less: Joint costs	4,63,125	4,27,500	4,89,843.75	4,90,912
Gross Margin	1,24,687.50	1,60,312.50	97,968.75	96,900.50
Gross Margin %	10.29%	13.24%	8.09%	8.00%

(2 Marks)

(iii) Further processing of Chocolate powder liquor base into Chocolate powder(Amount in Rs.)

Incremental revenue {Rs. 5,70,000 – (Rs. 997.50 x 300 gallon)}	2,70,750
Less: Incremental costs	3,02,812.50
Incremental operating income	(32,062.50)

(2 Marks)

Further processing of Milk Chocolate liquor base into Milk Chocolate.

(Amount in Rs.)

Incremental revenue {Rs.12,11,250 – (Rs. 1,235 x 450 gallon)}	6,55,500
Less: Incremental cost	6,23,437.50
Incremental operating income	32,062.50

(2 Marks)

The above computations show that Pokemon Chocolates could increase operating income byRs. 32,062.50 if chocolate liquor base is sold at split off point and milk chocolate liquor base isprocessed further.

Answer-3 :

Cost Ledger Control Account

Dr.	(Rs.)		(Rs.)	Cr.
To Store Ledger Control A/c	13,000	By Opening Balance	6,85,000	
To Balance c/d	9,42,000	By Store ledger control A/c	1,25,000	
		By Manufacturing OverheadControl A/c	85,000	
		By Wages Control A/c	60,000	
	9,55,000		9,55,000	

(2 Marks)

Stores Ledger Control Account

Dr.	(Rs.)		(Rs.)	Cr.
To Opening Balance	3,00,000	By WIP Control A/c	1,35,000	
To Cost ledger control A/c	1,25,000	By Cost ledger control A/c (Returns)	13,000	
		By Balance c/d	2,77,000	
	4,25,000		4,25,000	

(2 Marks)

WIP Control Account

Dr.	(Rs.)		(Rs.)	Cr.

To Opening Balance	1,50,000	By Finished Stock Ledger Control A/c	2,25,000
To Wages Control A/c	40,000	By Balance c/d	1,85,000
To Stores Ledger Control A/c	1,35,000		
To Manufacturing Overhead Control A/c	85,000		
	4,10,000		4,10,000

(1 Mark)

Finished Stock Ledger Control Account

Dr.	(Rs.)	Cr.	(Rs.)
To Opening Balance	2,50,000	By Cost of Sales	1,75,000
To WIP Control A/c	2,25,000	By Balance c/d	3,09,000
To Cost of Sales A/c (Sales Return)	9,000		
	4,84,000		4,84,000

(1 Mark)

Manufacturing Overhead Control Account

Dr.	(Rs.)	Cr.	(Rs.)
To Cost Ledger Control A/c	85,000	By Opening Balance	15,000
To Wages Control A/c	20,000	By WIP Control A/c	85,000
		By Under recovery c/d	5,000
	1,05,000		1,05,000

(1 Mark)

Wages Control Account

Dr.	(Rs.)	Cr.	(Rs.)
To Transfer to Cost Ledger Control A/c	60,000	By WIP Control A/c	40,000
		By Manufacturing Overhead Control A/c	20,000
	60,000		60,000

(1 Mark)

Cost of Sales Account

Dr.	(Rs.)	Cr.	(Rs.)
To Finished Stock Ledger Control A/c	1,75,000	By Finished Stock Ledger Control A/c (Sales return)	9,000
		By Balance c/d	1,66,000
	1,75,000		1,75,000

(1 Mark)

Trial Balance

	(Rs.)	(Rs.)
Stores Ledger Control A/c	2,77,000	
WIP Control A/c	1,85,000	
Finished Stock Ledger Control A/c	3,09,000	
Manufacturing Overhead Control A/c	5,000	
Cost of Sales A/c	1,66,000	
Cost ledger control A/c	-	9,42,000
	9,42,000	9,42,000

(1 Mark)

Answer-4 :

Effective machine hours = 200 hours × 75% = 150 hours

Computation of Comprehensive Machine Hour Rate

	Per month(Rs.)	Per hour (Rs.)
Fixed cost		
Supervision charges	3,000.00	
Electricity and lighting	7,500.00	
Insurance of Plant and building (Rs.16,250 ÷12)	1,354.17	
Other General Expenses (Rs.27,500÷12)	2,291.67	
Depreciation (Rs.32,400÷12)	2,700.00	
	<u>16,845.84</u>	112.31
Direct Cost		
Repairs and maintenance	17,500.00	116.67
Power	15,000.00	100.00
Wages of machine man		44.91
Wages of Helper		<u>32.97</u>
Machine Hour rate (Comprehensive)		406.86

(3 Marks)

Wages per machine hour

	Machine man	Helper
Wages for 200 hours		
Machine-man (Rs.125× 25)	Rs.3,125.00	—
Helper (Rs.75× 25)	—	Rs.1,875.00
Dearness Allowance (DA)	<u>Rs.1,575.00</u>	<u>Rs.1,575.00</u>
	Rs.4,700.00	Rs.3,450.00
Production bonus (1/3 of Basic and DA)	1,567.00	1,150.00
Leave wages (10% of Basic and DA)	<u>470.00</u>	<u>345.00</u>
	6,737.00	4,945.00
Effective wage rate per machine hour	Rs.44.91	Rs.32.97

(3 Marks)

Answer-5 (a) :

Let 4x = No. of units of J

Then 3x = no. of units of K

$$\text{BEP in x units} = \left(\frac{\text{Fixed Cost}}{\text{Contribution}} \right) = \frac{\text{Rs.6,16,000}}{(4x \times \text{Rs.40}) + 3x \times \text{Rs.20}}$$

$$\text{Or } x = \frac{\text{Rs.6,16,000}}{\text{Rs.220}} = 2,800 \text{ units}$$

Break- even point of Product J = $4 \times 2,800 = 11,200$ units
Break even point of Product K = $3 \times 2,800 = 8,400$ units

(4 Marks)

Answer-5 (b) :

(a)
$$\text{P/V Ratio} = \frac{\text{Changed in profit}}{\text{Change in Sales}} \times 100$$

(1 Mark)

$$= \frac{\text{Rs.7,00,000} - (- \text{Rs.3,00,000})}{(\text{Rs.57,00,000} - \text{Rs.32,00,000})} \times \frac{\text{Rs.10,00,000}}{\text{Rs.25,00,000}} \times 100 = 40\%$$

(1 Mark)

(b)
$$\begin{aligned} \text{Total Fixed cost} &= \text{Total Contribution} - \text{Profit} \\ &= (\text{Sales} \times \text{P/V Ratio}) - \text{Profit} \\ &= \left(\text{Rs.57,00,000} \times \frac{40}{100} \right) - \text{Rs.7,00,000} \\ &= \text{Rs. 22, 80,000} - \text{Rs. 7, 00,000} = \text{Rs.15, 80,000} \end{aligned}$$

(2 Marks)

(c)
$$\begin{aligned} \text{Contribution required to earn a profit of Rs.12, 00,000} \\ &= \text{Total fixed cost} + \text{Profit required} \\ &= \text{Rs.15, 80,000} + \text{Rs.12, 00,000} = \text{Rs.27, 80,000} \\ \text{Required Sales} &= \frac{27,80,000}{\text{P/V Ratio}} = \frac{27,80,000}{40\%} = \text{Rs.69,50,000} \end{aligned}$$

(1 Mark)