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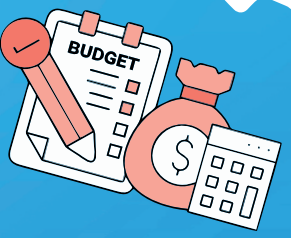

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Hey my buddies !!

How are you all ?? All good ? I hope everything is going very - very - very good

I am presenting to you all COLOURFUL QUESTION BANK for CA Intermediate COST MANAGEMENT

It took a lot of efforts . dedication . patience and obviously some hardwork to combine all PP , RTP , MTP and SM Questions and then group them on the basis of concepts asked. This book is a one - stop solution for all your COST related doubts and I assure that this single book will make you READY - TO - GO and score the marks that you desire to achieve.

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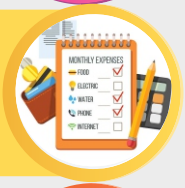

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"Let's fall in love..
With every chapter, With every page, With every concept.
Let's make it more interesting & fun in our own ways.
Let's open our hearts for this book in a new way."

6 CHAPTER MARGINAL COSTING

Q.1 MOS/BEP/Pv ratio calc | PY May 18

Following figures have been extracted from the books of M/s. RST Private Limited:

Financial Year	Sales (₹)	Profit/Loss (₹)
2016-17	4,00,000	15,000(loss)
2017-18	5,00,000	15,000 (Profit)

You are required to calculate:
(i) Profit Volume Ratio
(ii) Fixed Costs
(iii) Break Even Point
(iv) Sales required to earn a profit of ₹ 45,000.
(v) Margin of Safety in Financial Year 2017-18.

Ans.

	Sales (₹)	Profit (₹)
Year 2016	4,00,000	15,000 (loss)
Year 2017	5,00,000	15,000 (profit)
Difference	1,00,000	30,000

(i) $\text{P/V Ratio} = \frac{\text{Difference in profit}}{\text{Difference in Sales}} \times 100 = \frac{30,000}{1,00,000} \times 100 = 30\%$

(ii)

Contribution in 2016 (4,00,000 x 30%)		1,20,000
Add: Loss		15,000
Fixed Cost*		1,35,000
*Contribution	=	Fixed cost + Profit
∴ Fixed cost	=	Contribution – Profit

(iii) Break-even point $= \frac{\text{Fixed cost}}{\text{P/V ratio}} = \frac{1,35,000}{30\%} = 4,50,000$

(iv) Sales to earn a profit of 45,000

$\frac{\text{Fixed cost+Desired profit}}{\text{P/V ratio}} = \frac{1,35,000 + 45,000}{30\%} = 6,00,000$

(v) Margin of safety in 2017 –18

Margin of safety = Actual sales – Break-even sales
= 5,00,000-4,50,000 = 50,000

Q.2 Calculate sales for fixed profit | PY May 18

PH Gems Ltd. is manufacturing readymade suits. It has annual production capacity of 2,000 pieces. The Cost Accountant has presented following information for the year to the management:

Particulars	Amount (₹)	Amount (₹)
Sales 1,500 pieces @ ₹ 1,800 per piece		27,00,000
Direct Material	5,94,200	
Direct Labour	4,42,600	
Overheads (40% Fixed)	11,97,000	22,33,800
Net Profit		4,66,300

Evaluate following options:

(i) If selling price is increased by ₹ 200, the sales will come down to 60% of the total annual capacity. Should the company increase its selling price?

(ii) The company can earn a profit of 20% on sales if the company provide TIEPIN with ready-made suit. The cost of each TIEPIN is ₹ 18. Calculate the sales to earn a profit of 20% on sales.

Ans.

(i) Evaluation of Option

Selling Price = 1800 + 200 = 2,000

Sales = 2000 x 60% = 1200 Pieces

	(₹)
Sales (1,200 pieces @ ₹ 2,000)	24,00,000
Less: Direct Material $\left(\frac{5,94,200}{1500 \text{ units}} x 1,200\right)$	4,75,360
Direct Labour $\left(\frac{4,42,600}{1,500 \text{ units}} x 1,200\right)$	3,54,080
Variable Overhead $\left(\frac{11,97,000 x 60\%}{1,500 \text{ units}} x 1,200\right)$	5,74,560
Contribution	9,96,000
Less: Fixed cost (Rs. 11,97,000x40%)	4,78,800
Profit	5,17,200

If price has been increased by 11.11% (increases by 200 on 1,800) sales goes down by 20% (decreased by 300 on 1,500). Change in demand is greater than change in price. Since the variable costs are still same profit has been arose to ₹ 5,17,200 in-spite of high elasticity of demand. PH gems would not be able to sustain this policy on account of change if any in variable costs.

(ii) Evaluation of Option

	(₹)
Sales	1,800.00
Less: Direct Material $\frac{5,94,200}{1500}$	396.13
Cost of Tie PIN	18.00

Direct Labour $\frac{4,42,600}{1,500}$	295.07
Variable Overheads $\left(\frac{11,97,000x60\%}{1,500}\right)$	478.80
Contribution	612.00
P/V Ratio (612/1800x100)	34.0%

Sales to required earn a profit of 20%

Sales = $\frac{4,78,800+0.20 \text{ of Sales}}{34.00\%}$

Sales= 34,20,000 or 1,900 units (34,20,000/1800)

To earn profit 20% on sales of readymade suit (along with TIE PIN) company has to sold 1,900 units i.e. 95% of the full capacity. This sales level of 1,900 units is justified only if variable cost is constant. Any upside in variable cost would impact profitability, to achieve the desired profitability. Production has to be increased but the scope is limited to 5% only.

Q.3 Reorder Qty, Max, Min | PY Nov 18

M/s. SJ Private Limited manufactures 20000 units of a product per month. The cost of placing an order is ₹ 1,500. The purchase price of the raw material is ₹ 100 per kg. The re-order period is 5 to 7 weeks. The consumption of raw materials varies from 200 kg to 300 kg per week, the average consumption being 250 kg. The carrying cost of inventory is
9.75% per annum.
You are required to calculate:
(i) Re-order quantity
(ii) Re-order level
(iii) Maximum level
(iv) Minimum level
(v) Average stock level

Ans. Annual consumption 250 kg × 52 weeks = 13,000 kg.

(i) Re-order Quantity or EOQ = $\sqrt{\frac{2xAXO}{cxi}}$

A = Annual Consumption = 13,000 kg
O = Ordering Cost = . 1,500
C = Cost per kg = ₹. 100
i = carrying cost rate = 9.75%
Carrying cost per kg per annum (c× i) = 100 × 9.75% = ₹. 9.75

$\therefore$ EOQ = $\sqrt{\frac{2x13,000x1,500}{9.75}}$

= $\sqrt{\frac{39000000}{9.75}}$ = 2000 kg.

(ii) Re-order level = Max. re-order period × Max, Consumption
= 7 weeks × 300 kg = 2,100 kg

(iii) Maximum level = Re-order level + Re-order Qty – (Min re-order Period × Min. Consumption)

= 2100 kg + 2000 kg – (5 × 200) kg = 3100 kg.

(iv) Minimum level = Re-order level – (Avg. re-order period × Avg. Consumption)
= 2,100 kg – (6 × 250) kg = 600 kg.

(v) Avg. stock level = $\frac{1}{2}$(max level+min level)

$\frac{1}{2}$(3100+600) = 1850 kg

OR

= Minimum level + $\frac{1}{2}$ROQ

= 600 kg+ $\frac{1}{2}$x2000 kg. = 1600 kg.

Q.4 Calculate sales for fixed | PY Nov 18

A manufacturing company is producing a product 'A' which is sold in the market at ₹45 per unit. The company has the capacity to produce 40000 units per year. The budget for the year 2018-19 projects a sale of 30000 units.
The costs of each unit are expected as under:

	₹
Materials	12
Wages	9
Overheads	6

Margin of safety is ₹ 4,12,500.
You are required to:
(i) calculate fixed cost and break-even point.
(ii) calculate the volume of sales to earn profit of 20% on sales.

Ans

Margin of Safety = $\frac{\text{Pmfit}}{\text{P/V ratio}}$ = 4,12,500

= $\frac{\text{Profit}}{\frac{45-(12+9+6)}{45}}$ =4,12,500

= $\frac{\text{Profit}}{\frac{18}{45}}$ = 4,12,500

Profit = 1,65,000 OR P/V = (18/45) x 100 =40%

(i) Fixed Cost
Profit= (Sales × P/V Ratio) – Fixed Cost

1,65,000 = $\left((30{,}000x45)x\frac{18}{45}\right)$-Fixed Cost

Or Fixed Cost = 5,40,000 – 1,65,000
= ₹ 3,75,000

OR

Profit = Contribution – Fixed Cost=₹ 5,40,000-₹ 3,75,000 =₹.1,65,000

P/V Ratio = $\frac{18}{45}$ =40%

Break-even Point = Total Sales – Margin of Safety

= ₹ (30,000 × 45) – 4,12,500
= 13,50,000 – 4,12,500 =₹ 9,37,500

Q.5 BEP Units & Sales for fixed | PY May 19

M/s Gaurav Private Limited is manufacturing and selling two products: 'BLACK' and 'WHITE' at selling price of ₹ 20 and ₹ 30 respectively.

The following sales strategy has been outlined for the financial year 2019-20:

(i) Sales planned for the year will be ₹ 81,00,000 in the case of 'BLACK' and ₹ 54,00,000 in the case of 'WHITE'.

(ii) The selling price of 'BLACK' will be reduced by 10% and that of 'WHITE' by 20%.

(iii) Break-even is planned at 70% of the total sales of each product.

(iv) Profit for the year to be maintained at ₹ 8,26,200 in the case of 'BLACK' and ₹ 7,45,200 in the case of 'WHITE'. This would be possible by reducing the present annual fixed cost of ₹ 42,00,000 allocated as ₹ 22,00,000 to 'BLACK' and ₹ 20,00,000 to 'WHITE'.

You are required to calculate:

(1) Number of units to be sold of 'BLACK' and 'WHITE' to Break even during the financial year 2019-20.

(2) Amount of reduction in fixed cost product-wise to achieve desired profit mentioned at (iv) above.

Ans **(i)** Statement showing Break Even Sales

Particulars	Black	White
Sales Planned	81,00,000	54,00,000
Selling Price (₹)	18	24
Number of Units to be sold	4,50,000	2,25,000
Break Even sales (in Units),70% of total sales	**3,15,00**	**1,57,500**
Or		
Break Even sales (in ₹),70% of total sales	**56,70,00**	**37,80,000**

(ii) Statement Showing Fixed Cost Reduction

Profit to be maintained (₹)	8,26,200	7,45,200
Margin of Safety (70% of Sales) (₹)	24,30,000	16,20,000
PVR (Profit/ Margin of Safety) x 100	34%	46%
Contribution (Sales x 34% or 46%) (₹)	27,54,000	24,84,000
Less: Profit (₹)	8,26,200	7,45,200
Revised Fixed Cost (₹)	**19,27,80**	**17,38,800**
Present Fixed Cost (₹)	22,00,000	20,00,000
Reduction in Fixed Cost	**2,72,20**	**2,61,200**

Q.6 Variable/Fixed Cost | PY Nov 19

When volume is 4,000 units; average cost is ₹ 3.75 per unit. When volume is 5,000 units, average cost is ₹ 3.50 per unit. The Break-Even point is 6,000 units.

Calculate:

(i) Variable Cost per unit

(ii) Fixed Cost and
(iii) Profit Volume Ratio.

Ans

(i) Variable cost per unit = $\frac{\text{Change in Total Cost}}{\text{Change in Units}}$

$$= \frac{(3.50 \times 5{,}000 \text{ units}) - (3.75 \times 4{,}000 \text{ units})}{5{,}000 - 4{,}000}$$

$$= \frac{17{,}500 - 15{,}000}{1{,}000} = \frac{2{,}500}{1{,}000} = 2.5$$

(ii) Fixed cost = Total Cost – Variable cost (at 5,000 units level)
= 17,500-2.5 x 5000 = 5,000

(iii) Contribution per unit = $\frac{\text{Fixed cost}}{\text{BEP(in units)}} = \frac{5{,}000}{6{,}000 \text{units}} = 0.833$

P/V Ratio = $\frac{\text{Contribution per unit}}{\text{Sale price per unit}} = \frac{0.833}{2.5+0.833} = 25\%$

Q.7 Calculate lowest Sp | PY Nov 19

PJ Ltd manufactures hockey sticks. It sells the products at ₹ 500 each and makes a profit of ₹ 125 on each stick. The Company is producing 5,000 sticks annually by using 50% of its machinery capacity.
The cost of each stick is as under:
Direct Material ₹ 150
Direct Wages ₹ 50
Works Overhead ₹ 125 (50% fixed)
Selling Expenses ₹ 50 (25% variable)
The anticipation for the next year is that cost will go up as under:
Fixed Charges 10%
Direct Wages 20%
Direct Material 5%
There will not be any change in selling price.
There is an additional order for 2,000 sticks in the next year.
Calculate the lowest price that can be quoted so that the Company can earn the same profit as it has earned in the current year?

Ans

Selling Price = ₹ 500 Profit = ₹ 125 No of Sticks = 5,000

Particular	Current Year (₹)	Next Year (₹)
Direct Material	150	157.50 (150 + 5%)
Direct Wages	50	60 (50+20%)
Works Overheads	62.50 (125 × 50%)	62.5
Selling Expenses	12.50 (50 × 25%)	12.5

Total Variable Cost	275	292.50
Fixed Cost (62.5 × 5,000) = 3,12,500; (37.5 × 5,000) = 1,87,500	5,00,000	5,50,000

Let: Lowest Price Quoted = K
Now, Sales = Target Profit (5,000 units × ₹ 125) + Variable Cost + Fixed Cost Or, = (5,000 × 500) + (2,000 × K)
= 6,25,000 + 20,47,500 + 5,50,000 Or, K = ₹ 361.25
So, Lowest Price that can be quoted to earn the profit of ₹ 6,25,000 (same as current year) is ₹ 361.25

Q.8 Best Product Mix | PY Nov 20

Moon Ltd. produces products 'X', 'Y' and 'Z' and has decided to analyse it's production mix in respect of these three products - 'X', 'Y' and 'Z'.
You have the following information :

	X	Y	Z
Direct Materials ₹ (per unit)	160	120	80
Variable Overheads ₹ (per unit)	8	20	12

Direct labour :

Departments:	Rate per Hour (₹)	Hours per unit	Hours per unit	Hours per unit
		X	Y	Z
Department-A	4	6	10	5
Department-B	8	6	15	11

From the current budget, further details are as below :

	X	Y	Z
Annual Production at present (in units)	10,000	12,000	20,000
Estimated Selling Price per unit (₹)	312	400	240
Sales departments estimate of possible sales in thecoming year (in units)	12,000	16,000	24,000

There is a constraint on supply of labour in Department-A and its manpower cannot be increased beyond its present level.
Required:
(i) Identify the best possible product mix of Moon Ltd.
(ii) Calculate the total contribution from the best possible product mix.

Ans (i) Statement Showing "Calculation of Contribution/ unit"

Particulars	X (₹)	Y (₹)	Z (₹)
Selling Price (A)	312	400	240
Variable Cost:			
Direct Material	160	120	80

Direct Labour			
Dept. A (Rate x Hours)	24	40	20
Dept. B (Rate x Hours)	48	120	88
Variable Overheads	8	20	12
Total Variable Cost (B)	240	300	200
Contribution per unit (A - B)	**72**	**100**	**40**
Hours in Dept. A	6	10	5
Contribution per hour	12	10	8
Rank	I	II	III

Existing Hours = 10,000 x 6hrs. + 12,000 x 10 hrs. + 20,000 x 5 hrs. = 2,80,000 hrs. Best possible product mix (Allocation of Hours on the basis of ranking)

Produce 'X'	=	12,000 units
Hours Required	=	72,000 hrs (12,000 units × 6 hrs.)
Balance Hours Available	=	2,08,000 hrs (2,80,000 hrs. – 72,000 hrs.)
Produce 'Y' (the Next Best)	=	16,000 units
Hours Required	=	1,60,000 hrs (16,000 units × 10 hrs.)
Balance Hours Available	=	48,000 hrs (2,08,000 hrs. – 1,60,000 hrs.)
Produce 'Z' (balance)	=	9,600 units (48,000 hrs./ 5 hrs.)

(ii) Statement Showing "Contribution"

Product	Units	Contribution/ Unit (₹)	Total Contribution (₹)
X	12,000	72	8,64,000
Y	16,000	100	16,00,000
Z	9,600	40	3,84,000
		Total	**28,48,000**

Q.9 Fixed Cost, Sales, BEP | PY Jan 21

During a particular period ABC Ltd has furnished the following data: Sales ₹ 10,00,000
Contribution to sales ratio 37% and Margin of safety is 25% of sales.
A decrease in selling price and decrease in the fixed cost could change the "contribution to sales ratio" to 30% and "margin of safety" to 40% of the revised sales. Calculate:
(i) Revised Fixed Cost.
(ii) Revised Sales and
(iii) New Break-Even Point.

Ans

(a) Contribution to sales ratio (P/V ratio) = 37%
Variable cost ratio = 100% - 37% = 63%
Variable cost 10,00,000 x 63% = 6,30,000
After decrease in selling price and fixed cost, sales quantity has not changed.
Thus, variable cost is ₹ 6,30,000
Revised Contribution to sales = 30%
Thus, Variable cost ratio = 100%-30% = 70%

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