

**Unit - 4**

**MODULE – 6**

**Absorption and Marginal  
Costing**

**Practical Problems  
(with solutions)**

1. Pepsi Company produces a single article. Following cost data is given about its product:-

Selling price per unit	Rs.40
Marginal cost per unit	Rs.24
Fixed cost per annum	Rs. 16000

Calculate:

- (a) P/V ratio (b) break even sales (c) sales to earn a profit of Rs. 2,000 (d) Profit at sales of Rs. 60,000 (e) New break even sales, if price is reduced by 10%.

**Solution:**

We know that  $(S-v) / S = F + P$  OR  $s \times P/V \text{ Ratio} = \text{Contribution}$

So, **(A) P/V Ratio** =  $\text{Contribution}/\text{sales} \times 100$   
 $= (40-24)/40 \times 100 = 16/40 \times 100$  OR 40%

**(B) Break even sales**

$S \times P/V \text{ Ratio} = \text{Fixed Cost}$

(At break even sales, contribution is equal to fixed cost)

Putting this values:  $s \times 40/100 = 16,000$

$S = 16,000 \times 100 / 40 = 40,000$  OR 1000 units

**(C) The sales to earn a profit of Rs. 2,000**

$S \times P/V \text{ Ratio} = F + P$

Putting this values:  $s \times 40/100 = 16000 + 2000$

$S = 18,000 \times 100/40$

$S = \text{Rs. } 45,000$  OR 1125 units

**(D) Profit at sales of 60,000**

$S \times P/V \text{ Ratio} = F + P$

Putting this values:  $\text{Rs. } 60,000 \times 40/100 = 16000 + P$

$24,000 = 16000 + P$

$24,000 - 16,000 = P$

8,000

**(E) New break even sales, if sale price is reduced by 10%**

New sales price =  $40 - 10\% = 40 - 4 = 36$

Marginal cost = Rs. 24

Contribution = Rs. 12

P/V Ratio =  $\text{Contribution}/\text{Sales}$

$= 12/36 \times 100$  OR 33.33%

Now,  $s \times P/V \text{ Ratio} = F$  (at B.E.P. contribution is equal to fixed cost)

$S \times 100/300 = \text{Rs. } 16000$

$S = 16000 \times 300/100$

$S = \text{Rs. } 48,000.$

2. From the following information's find out:

a. P/V Ratio

b. Sales &

c. Margin of Safety

Fixed Cost = Rs.40, 000

Profit = Rs. 20,000

B.E.P. = Rs. 80,000

**Solution:**

**a. P/V Ratio.**

We know that  $S - V = F + P$       **OR**       $S(S - V)/S = F + P$

B.E.S. x P/V Ratio = F (Value of P is zero at BE Sales)      **OR**      P/V Ratio = F/BES

Putting the value,

P/V Ratio =  $40,000/80,000 = 50/100$       **OR**      50%

**b. Sales.**

We know that Sales x P/V Ratio = F+ P      **OR**      Sales x P/V Ratio = Contribution

OR Sales = Contribution/P/V Ratio

So,      =  $(40,000 + 20,000)/50/100$

=  $(60,000 \times 100)/50$

=Rs.1, 20,000

**c. Margin of Safety.**

Margin of Safety = Sales – B.E.P Sales

So,      MOS = 1, 20,000 – 80,000

MOS = Rs.40, 000

3. Bansi company manufactures a single product having a marginal cost of Rs. 1.50 per unit.

Fixed cost is Rs. 30,000 per annum. The market is such that up to 40,000 units can be sold at a price of Rs. 3.00 per unit, but any additional sale must be made at Rs. 2.00 per unit. Company has a planned profit of Rs. 50,000. How many units must be made and sold?

**Solution:**

a. Contribution desired = Fixed cost + Desired Profit

=  $30,000 + 50,000 = 80,000$

b. Calculation of contribution by producing 40,000 units.

Contribution per unit = Selling price – Marginal cost

=  $3.00 - 1.50$

= 1.50

c. Contribution for producing 40,000 units.

=  $1.50 \times 40,000$  units

= Rs.60, 000

d. Additional units to be produced and sold at Rs. 2.00 per unit after 40,000 units.

=Rs.80, 000 –Rs. 60, 000

=Rs.20, 000

e. Units to be produced for contribution of Rs. 20, 000 after change in price.

Contribution per unit = Rs. 2.00 – Rs. 1.50= Rs. 0.50

f. Additional units to be produced for contribution of Rs. 20, 000.

= (20, 000 x 100)/50 = 40, 000 units.

**Total units to be produced to earn planned profit = 40, 000 + 40, 000 = 80, 000 units.**

4. Mitanshi & company manufacture three products. The following is the cost data relating to products A, B, and C.

Products	A	B	C	Total
	Rs.	Rs.	Rs.	Rs.
Sales	1, 50, 000	90, 000	60, 000	3, 00, 000
Variable Cost	1, 20, 000	63, 000	36, 000	2, 19, 000
Contribution	30, 000	27, 000	24, 000	81, 000
Fixed Cost				40, 500
Profit				40, 500

Prove that how knowledge of marginal costing can help management in changing the sales mix in order to increase profit of the company.

**Solution:** Let's find out relative profitability so that we can compare it later on.

Products	A	B	C	Total
	Rs.	Rs.	Rs.	Rs.
Sales	1, 50, 000	90, 000	60, 000	3, 00, 000
Variable Cost	1, 20, 000	63, 000	36, 000	2, 19, 000
Contribution	30, 000	27, 000	24, 000	81, 000
Fixed Cost				40, 500
<b>Profit</b>				<b>40, 500</b>
<b>P/V Ratio</b>	<b>20%</b>	<b>30%</b>	<b>40%</b>	<b>27%</b>

From the above table it is clear that with the comparison of product B and C, A is less profitable. Keeping total production same, company should change the sales mix in a way that emphasis should be on producing product C and B.

Now assume that the company decides to use its production capacity more for product B and C than A. Let's see the effect on profit if sale of product B and C is increased by Rs. 30, 000 each and product A by reducing Rs. 60, 000.

Products	A	B	C	Total
	Rs.	Rs.	Rs.	Rs.
Sales	90, 000	1, 20, 000	90, 000	3, 00, 000
Variable Cost	72, 000	84, 000	54, 000	2, 10, 000
Contribution	18, 000	36, 000	36, 000	90, 000
Fixed Cost				40, 500
<b>Profit</b>				<b>49, 500</b>

From the above table, we can observe that proposed change in product mix leads to an increase in profit from Rs.40, 500 to Rs. 49, 500.

5. A company has a machine No. 9 which can produce either product A or B. The cost data relating to machine A and B are as follows:

Particulars	Product A	Product B
Selling price	Rs. 20.00	Rs. 30.00
Variable expenses	Rs. 14.00	Rs. 18.00
Contribution	Rs. 6.00	Rs. 12.00

Additional Information:

- Capacity of machine No. 9 is 1, 000 hrs.
  - In one hrs machine No. 9 can produce 3 units of A and 1 unit of B.
- Which product should machine No. 9 produced?

**Solution:**

Statement showing contribution per hour for machine No. 9

Particulars	Product A	Product B
Sales	20.00	30.00
Variable expenses	14.00	18.00
Contribution per unit	6	12
Contribution per hour	18.00	12.00
Contribution per 1, 000 units	18, 000	12, 000

From the above table we can see that **company should produce product A** with the help of machine No. 9.

6. Meet & company Ltd. has three divisions each of which makes a different product. The budgeted data for the next year is as follows:

Divisions	A	B	C
	Rs.	Rs.	Rs.
Sales	1, 12, 000	56, 000	84, 000
Direct material	14, 000	7, 000	14, 000
Direct labor	5, 600	7, 000	22, 400
Variable overhead	14, 000	7, 000	28, 000
Fixed cost	28, 000	14, 000	28, 000
Total cost	61, 600	35, 000	92, 400

The management is considering closing down division C. There is no possibility of reducing variable costs. Advice whether or not division C should be closed down.

**Solution:****Marginal Cost Statement**

<b>Division</b>	<b>A</b>	<b>B</b>	<b>C</b>
	<b>Rs.</b>	<b>Rs,</b>	<b>Rs.</b>
Sales	1, 12, 000	56, 000	84, 000
Marginal cost (Direct material + Direct cost + Variable overheads)	33, 600	21, 000	64, 400
Contribution	78, 400	35, 000	19, 600
Fixed cost	28, 000	14, 000	28, 000
<b>Profit</b>	<b>50, 400</b>	<b>21, 000</b>	<b>(8, 400)</b>

**7. Cost data for last year:**

Sales	-	60, 00, 000	(Operating at 75% capacity)
Marginal cost (50% of sale)	-	30, 00, 000	
Contribution	-	30, 00, 000	
Fixed cost	-	20, 00, 000	
Profit	-	10, 00, 000	
Percentage of profit over sales	-	16.7%	

A report on the performance for the year states:

Sales	-	80, 00, 000
Profit	-	16, 00, 000
Percentage on profit on sale	-	20%

Should the performance of current year be commended? What option should be conveyed to the managing director on the basis of the Cost - Volume - Profit analysis?

**Solution:****Statement showing profit for last year and profit at a sale of Rs. 80, 00, 000**

<b>Particulars</b>	<b>Last year performance 75% capacity</b>	<b>Performance in present activity level, i.e., 100%</b>
	<b>Rs.</b>	<b>Rs.</b>
Sales	60, 00, 000	80, 00, 000
Marginal cost (50% of sales)	30, 00, 000	40, 00, 000
Contribution	30, 00, 000	40, 00, 000
Fixed cost	20, 00, 000	20, 00, 000
<b>Profit</b>	<b>10, 00, 000</b>	<b>20, 00, 000</b>

From the above table we can say that result of current year's performance is not commendable because profit should have been 25% of sales after operating at 100% capacity, whereas it is only 20% of sales.

8. The following budget has been prepared at 70% level of home market:

Units	-	4,200
Wages	-	12,600
Materials	-	21,000
Fixed cost	-	7,000
Variables cost	-	2,100
Total	-	42,700

The selling price in India is Rs. 15. In Sri Lanka about 800 units may be sold only at Rs. 10 and in addition 25 paise per unit will be expenses as freight etc, Do you advise trying for the market in the Sri Lanka?

**Solution:**

Particulars	India (4200 units)	Sri Lanka (800 units)	Total (5000 units)
	Rs.	Rs.	Rs.
Sales (units x price) (A)	63,000	8,000	71,000
Materials (Rs. 5 per unit)	21,000	4,000	25,000
Wages (Rs. 3 per unit)	12,600	2,400	15,000
Variables (Rs. 0.50 per unit)	2,100	400	2,500
Freight (Only for Sri Lanka Rs. 0.25 per unit)	-----	200	200
Marginal cost (B)	35,700	7,000	42,700
Contribution (A – B)	27,300	1,000	28,300
Less: Fixed cost	7,000	-----	7,000
	<b>20,300</b>	<b>1,000</b>	<b>21,300</b>

**Suggestion:** It is advisable to try for the Sri Lankan market at Rs. 10 per unit as by doing so there is an increase of Rs. 1000.

9. Asian paints manufacture 1,000 tins of paints when working at normal capacity. It incurs the cost of Rs. 16 in manufacturing one unit. The details of this cost are given below:

Particulars	Rs.
Direct material	7.50
Direct labor	2.00
Variable overheads	2.50
Fixed overheads	4.00
Production cost (per unit)	16.00

Each unit of product is sold for Rs. 20 with variable selling and administrative expenses of Rs. 0.50 per unit of production.

During the next 3 months, only 500 units can be produced and sold. Management plans to close down the factory estimating that the fixed manufacturing cost can be reduced to Rs. 2, 000 for the quarter.

When the plant is operating, the fixed overhead costs are incurred at a uniform rate throughout the year. Additional cost of plant shut down for the three month is estimated at Rs. 2, 800.

Express your view whether the plant should be shut down for three months, and calculate the shut down point for three months in units of products.

**Solution:**

**(A) Statement showing Contribution per unit:**

Particulars	Per unit Rs.
Direct material	7.50
Direct labor	2.00
Variable overheads	2.50
Variable selling and administrative expenses	0.50
Marginal cost (Total) (A)	12.50
Sales (B)	20.00
<b>Contribution (A – B)</b>	<b>7.50</b>

**(B) Computation of Loss, if the plant is operated:**

**500 units to be produced:**

Contribution on 500 units:

500 x Rs. 7.50 = Rs. 3, 750

Fixed cost for three months

10, 000 x 4 x 3/12 = Rs. 10, 000

Expected cost on Operation

(Contribution – Fixed cost) = Rs. 6, 250

**(C) Computation of loss, if the plant is shut down:**

Unfavorable Fixed cost = Rs. 2, 000

Additional cost of Shut down = Rs. 2, 800

Total loss on shut down = Rs. 4, 800

**(D) Advise: From the above calculation, it is clear that it is in the interest of company to shut down.**

**(E) Calculation of shut down point:**

Avoidable fixed cost for the period

**= Total fixed costs for the period – unavoidable fixed cost - additional cost for shut down**

= Rs. 10, 000 – Rs. 2, 000 – Rs. 2, 800

= Rs. 5, 200

**Shut down point = Avoidable fixed cost / Contribution per unit**

= 5, 200 / 7.50 = **693 units.**



10. A company is providing its product to the consumer through the wholesalers. The managing director of the company thinks that if the company starts selling through retailers or to the consumers directly, it can increase its sales, charge higher prices and make more profit.

On the basis of the following information, advise the managing director whether the company should change its channel of distribution or not:

Particulars	Wholesaler	Retailer	Consumer
	Rs.	Rs.	Rs.
Sales per unit	3.60	5.25	6.00
Estimated Sales per year (units)	1, 00, 000	1, 20, 000	1, 80, 000
Selling and distribution overheads (per unit)	0.40	1.00	1.50

Cost of production: Variable cost Rs. 2.50 per unit, Fixed cost Rs. 50, 000.

**Solution:**

**Statement of profit**

Particulars	Wholesaler	Retailers	Consumers
	Rs.	Rs.	Rs.
No. of unit sold	1, 00, 000	1, 20, 000	1, 80, 000
Sales revenue (unit x price) (A)	3, 60, 000	6, 30, 000	10, 80, 000
Variable cost	2, 50, 000	3, 00, 000	4, 50, 000
Selling and distribution overheads	40, 000	1, 20, 000	2, 70, 000
Marginal cost (B)	2, 90, 000	4, 20, 000	7, 20, 000
Contribution (A – B)	70, 000	2, 10, 000	3, 60, 000
<b>Less: Fixed cost</b>	50, 000	50, 000	50, 000
<b>Profit (Contribution – Fixed cost )</b>	<b>20, 000</b>	<b>1, 60, 000</b>	<b>3, 10, 000</b>

**Advise:** Sales should be made directly to the consumers as this channel contributes higher profit.

11. The cost analysis of two products A and B is given below:

Particulars	Product A	Product B
	Rs.	Rs.
Material Rs. 2.50 per unit	25	45
Labor @ Rs. 1 per hour	12	---
Labor @ Rs. 1.50 per hour	---	15
Variable overheads	2	5
Selling price	70	80

On the basis of above information, which product would you recommend to be manufactured if labor is key factor and if material is key factor?

**Solution:**

Here first of all we have to find out contribution on the basis of both, material as a key factor and labor as a key factor.

**Statement showing marginal cost and contribution**

Particulars	Product A	Product B
	Rs.	Rs.
Selling price(A)	70	80
Material	25	45
Labor	12	15
Overheads	2	5
Marginal cost (B)	39	65
Contribution (A – B)	31	15
Contribution per unit of Material	31/10 units = 3.10 (25 units/ 2.50 = 10 units)	15/18 = 0.83 (45 units/ 2.50 = 18 units)
Contribution per labor Hour	0.258 (31/12 hrs)	1.50 (15/10 hrs)

**Advise:** If labor is key factor then product B and if material is key factor then product A should be produced.

12. A manufacturer produces 1500 units of products annually. The marginal cost of each product is Rs. 960 and the product is sold for Rs. 1200. Fixed cost incurred by the company is Rs. 48, 000 annually. Calculate P/V Ratio and what would be the break - even point in terms of output and in terms of sales value?

**Solution:**

**A. Contribution per unit = Sales – Variable cost = Rs. 1200 – Rs. 960 = Rs. 240**

**B. P/V Ratio = Contribution / Sales x 100 = 240/1200 x 100 = 20%**

**C. Break-even point (in units) = Fixed cost / Contribution per unit =**  
 $= 48,000 / 240 = 200$  units

**D. Break-even point (in Rs.) = Break-even point x selling price per unit**  
 $= 200 \times 1200 = 2,40,000$

**OR**

**D. Break-even point (in Rs.) = Fixed cost / P/V Ratio**  
 $= 48,000 / 20\% = 2,40,000$

13. From the following data calculate Margin of Safety.

Particulars	Rs.
Sales	15,00,000
Fixed expenses	4,50,000
Profit	3,00,000

**Solution:**

$$\begin{aligned} \text{P/V Ratio} &= \text{Fixed expenses} + \text{Profit} / \text{Sales} \times 100 \\ &= \text{Rs. } 4,50,000 + 3,00,000 / 15,00,000 \times 100 \\ &= 7,50,000 / 15,00,000 \times 100 \\ &= 50\% \end{aligned}$$

$$\begin{aligned} \text{Margin of Safety} &= \text{Profit} / \text{P/V Ratio} \\ &= 3,00,000 / 50\% \\ &= 6,00,000 \end{aligned}$$

14. Following data is of Dev manufacturing company.

Costs	Variable cost (% of Sales)	Fixed cost Rs.
Direct materials	23.8	
Direct labor	18.4	
Factory overheads	21.6	37,980
Distribution expenses	4.1	11,680
General & administrative expenses	11.1	13,340

Budgeted sales for the next year are Rs. 3,70,000.

Calculate the followings:

The sales required to break even.

Profit at the budgeted sales volume

The profit, if actual sales – A. Increases by 5 % from the budgeted sales and B. Drop by 10% from the budgeted sales.

**Solution:**

**A. Variable cost** = 23.8 + 18.4 + 21.6+4.1+11.1 = 79% (of sales)

So, it will be 79% of sales = 3,70,000 x 79 / 100 = 2,92,300

**B. Fixed cost** = Rs. 37,980 + Rs. 11,680 + Rs. 13,340 = 63,000

**C. Contribution** = 100 – 79 = 21%

**D. P/V Ratio** = **Contribution / Sales x 100**

= 21 / 100 x 100 = 21%

**Break-even point** = **Fixed cost / P/V Ratio**

= 63,000 / 21%

= Rs. 3,00,000

**Profit at budgeted sales of Rs. 3,70,000**

**Contribution** = **Sales x P/V Ratio**

= 3,70,000 x 21%

= Rs. 77,700

**Contribution** = **Fixed expenses + Profit**

**So, Profit** = **Contribution – Fixed expenses**

= Rs. 77,700 – 63,000

= Rs. 14,700

**Profit if actual sales increased by 5% from the budgeted sales.**

Particulars	Rs.
Sales	3, 70, 000
Add: 5% increase on Rs.3, 70, 000	18, 500
Revised sales	3, 88, 500
Less: Variable cost 79% of Rs. 3, 88, 500	3, 06, 915
Contribution	81, 585
Less: Fixed cost	63, 000
<b>Profit</b>	<b>18, 585</b>

**Profit if actual sales dropped by 10%**

Particulars	Rs.
Sales	3, 70, 000
Less: 10 % decrease on Rs. 3, 70, 000	37, 000
Revised sales	3, 33, 000
Less: Variable cost 79% of 3, 33, 000	2, 63, 070
Contribution	69, 930
Fixed cost	63, 000
<b>Profit</b>	<b>6, 930</b>

15. Gyan limited manufactures and sells four types of products under the brand names A, B, C, and D. The sales mix in value comprises 30%, 40%, 20%, and 10% of A, B, C, and D respectively. The total budgeted sales are Rs. 60, 000 per month. The operating costs are:
- Product A - 60% of selling price
  - Product B - 70% of selling price
  - Product C - 80% of selling price
  - Product D - 70% of selling price
- Fixed cost Rs. 12, 000 per month. Calculate the break-even point and percentage of margin of safety for the product on overall basis.

**Solution:**

**Calculation of Sales Mix**

Particulars	Products				
	A	B	C	D	Total
	30%	40%	20%	10%	100%
	Rs.	Rs.	Rs.	Rs.	Rs.
Sales	18, 000	24, 000	12, 000	6, 000	60, 000
Less: Variable cost	10, 800	16, 800	9, 600	4, 200	41, 400
Contribution	7, 200	7, 200	2, 400	1, 800	18, 600
Less: Fixed cost					12, 000
<b>Profit</b>					<b>6, 600</b>

$$\text{P/V Ratio} = \text{Contribution} / \text{Sales} \times 100$$

$$= 18,600 / 60,000 \times 100$$

$$= 31\%$$

$$\text{Break-even point} = \text{Fixed cost} / \text{P/V Ratio}$$

$$= 12,000 / 31\%$$

$$= 38,709$$

$$\text{Margin of safety} = \text{Actual sales} - \text{Break-even point} / \text{Actual sales} \times 100$$

$$= 60,000 - 38,709 / 60,000 \times 100$$

$$= 35.48\%$$

16. From the following information, calculate Break-even point and Sales to earn profit of Rs. 2,40,000.

Particulars	Rs.
Sales	8,00,000
Fixed cost	3,60,000
Variable cost	5,60,000

**Solution:**

$$\text{Contribution} = \text{Sales} - \text{Variable cost}$$

$$= 8,00,000 - 5,60,000$$

$$= 2,40,000$$

$$\text{P/V Ratio} = \text{Contribution} / \text{Sales} \times 100$$

$$= 2,40,000 / 8,00,000 \times 100$$

$$= 30\%$$

$$\text{Sales to earn a profit of Rs. 2,40,000}$$

$$= \text{Fixed cost} + \text{Desired Profit} / \text{P/V Ratio}$$

$$= 3,60,000 + 2,40,000 / 30\%$$

$$= 6,00,000 / 30\%$$

$$= 20,00,000$$

17. From the information given below, calculate P/V Ratio, Fixed expenses, Expected profit if sales is budgeted at Rs. 90,000.

Year	sales	Profit
2004	1,80,000	30,000
2005	2,60,000	50,000

**Solution:**

$$\text{P/V Ratio} = (\text{Change in profit Rs.} / \text{Change in sales Rs.}) \times 100$$

$$= 50,000 - 30,000 / 2,60,000 - 1,80,000 \times 100$$

$$= 20,000 / 80,000 \times 100$$

$$= 25\%$$

$$\text{Contribution} = \text{S} \times \text{P/V Ratio}$$

$$= 1,80,000 \times 25\%$$

$$= 45,000$$

$$\begin{aligned}
 \text{Fixed cost} &= \text{Contribution} = F + \text{Profit} \\
 &= 45,000 = F + 30,000 \\
 &= F = 45,000 - 30,000 \\
 &= F = 15,000
 \end{aligned}$$

**When sales is budgeted as Rs. 90,000**

$$\begin{aligned}
 \text{Contribution} &= \text{Sales} \times \text{P/V Ratio} \\
 &= 90,000 \times 25 / 100 \\
 &= 22,500
 \end{aligned}$$

$$\begin{aligned}
 \text{Profit} &= \text{Contribution} - \text{Fixed cost} \\
 &= 22,500 - 15,000 = 7,500
 \end{aligned}$$

**18.** The budgeted results of Dev limited company include the following:

Products	Sales volume Rs.	P/V Ratio
A	2,00,000	40%
B	1,20,000	50%
C	80,000	25%
Total	4,00,000	30%

Fixed overheads for the period are Rs. 80,000. The management is very much concerned at the result forecasts for the company. They have requested you to prepare a statement showing the amount of loss expected and recommend a change in sales mix which will eliminate the expected loss.

**Solution:**

$$\text{A. Contribution} = 4,00,000 \times 30 / 100 = 1,20,000$$

$$\begin{aligned}
 \text{Loss} &= \text{Contribution} - \text{Fixed cost} \\
 &= 1,20,000 - 80,000 \\
 &= 40,000
 \end{aligned}$$

**B. Recommended change in sales mix:**

**Under recovery of fixed cost or Loss / P/V Ratio of the product**

$$\begin{aligned}
 \text{Product A} &= 40,000 / 40\% \\
 &= 1,00,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Product B} &= 40,000 / 50\% \\
 &= 80,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Product C} &= 40,000 / 25\% \\
 &= 1,60,000
 \end{aligned}$$

**C. Increase in total sale to eliminate loss of Rs. 40,000:**

$$\begin{aligned}
 &= \text{Expected Loss} / \text{Composite P/V Ratio} \\
 &= 40,000 / 30\% \\
 &= 1,33,334
 \end{aligned}$$

19. Use the following information and explain that how the reduction in selling price would affect the margin of safety?

Particulars	Rs.	Rs.
Selling price per unit	-----	40
Variable cost		
Material	12	-----
Labor	8	-----
Overheads	4	24

Fixed cost is Rs. 8, 000.

Full capacity of the Plant is 5, 000 units.

Reduced selling price is Rs. 32 per unit.

**Solution:**

1. When selling price is Rs. 40, then Margin of Safety:

MOS = Total sales – Sales at B.E.P.

So, first of all we have to calculate Total sales and Sales at B.E.P.

**A. Total Sales = Total units x Sales price per unit**

= 5, 000 x 40

= 2, 00, 000

**B. Sales at B.E.P. = Fixed cost x Price / Price – Variable cost**

= 8, 000 x 40 / 40 – 24

= 3, 20, 000 / 16

= 20, 000

From the above information now we can calculate Margin of Safety by the following way:

Margin of Safety = Total sales – Sales at B.E.P.

= 2, 00, 000 – 20, 000

= 1, 80, 000

2. Margin of Safety when reduced selling price is Rs. 32:

B.E.P. = Fixed cost x Price / Price – Variable cost

= 8, 000 x 32 / 32 – 24

= 8, 000 x 32 / 8

= 32, 000

Margin of Safety = 1, 80, 000 – 32, 000

Margin of Safety = 1, 48, 000

3. **Impact:** From the above calculation we can see that the reduced price will decrease margin of safety and B.E.P. will increase.