(Rs./Unit) 15

IV. EQUATIONS OF MARGINAL COSTING : ✱✱✱

Basic Equation : Profit = Sales - Total Cost

1. PROFIT	= Sales - Total Cost	OR	= Sales - (Variable Cost + Fixed Cost)
		OR	= Contribution - Fixed Cost
2. SALES	= Total Cost + Profit	OR	= (Variable cost + Fixed Cost) + Profit
		OR	= Variable Cost + Contribution
3. CONTRIBUTION	= Sales - Variable Cost	OR	= Profit + Fixed Cost
4. FIXED COST	= Total Cost - Variable Cost	OR	= Contribution - Profit
5. VARIABLE COST	= Total Cost - Fixed Cost	OR	= Sales - Contribution

6. PROFIT VOLUME RATIO OR P/V RATIO $= \dfrac{\text{Contribution}}{\text{Sales}} \times 100$ OR $= \dfrac{\text{Marginal Change in Profit}}{\text{Marginal Change in Sales}} \times 100$

7. BREAK EVEN POINT :

No. of Units	**Rs. Sales**	**% Capacity**
$= \dfrac{\text{Fixed Cost}}{\text{Contribution per unit}}$	$= \dfrac{\text{Fixed Cost}}{\text{P V Ratio}}$	$= \dfrac{\text{Fixed Cost}}{\text{Contribution at 1\% capacity}}$

8. PROFITABILITY AT DESIRED LEVEL OF OUTPUT :

= Contribution - Fixed Cost OR

= (No. of Units X Contribution per unit) - Fixed Cost OR

C/P N/P

= (Rs. Sales X P / V Ratio) - Fixed Cost OR

= (% Capacity X Contribution at 1 % capacity) - Fixed Cost

9. VOLUME OF SALES REQUIRED TO EARN DESIRED PROFIT :

In No. of Units $= \dfrac{\text{Desired Profit + Fixed Cost}}{\text{Contribution per unit}}$ → {Desired Contribution}

(40%){350

In Rs. Sales $= \dfrac{\text{Desired Profit + Fixed Cost}}{\text{P / V Ratio}}$

In % Capacity $= \dfrac{\text{Desired Profit + Fixed Cost}}{\text{Contribution at 1\% capacity}}$

S
-V.C
C
-FC
P

10. MARGIN OF SAFETY = Total Sales - Break Even Sales

11. PERCENTAGE OF MARGIN OF SAFETY or MOS RATIO

$$= \frac{\text{Margin of Safety (sales)}}{\text{Total Sales}} \times 100$$

12. Variable Cost per Unit $= \dfrac{\text{Change in Total Cost}}{\text{Change in Output}}$ F.C + V.C

13. Contribution per Unit $= \dfrac{\text{Change in Profit}}{\text{Change in Output}}$

14. P/V Ratio $= \dfrac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$

15. Variable Cost Ratio $= \dfrac{\text{Change in Total Cost}}{\text{Change in Sales}} \times 100$

16. Net Profit = Margin of Safety x P/V Ratio