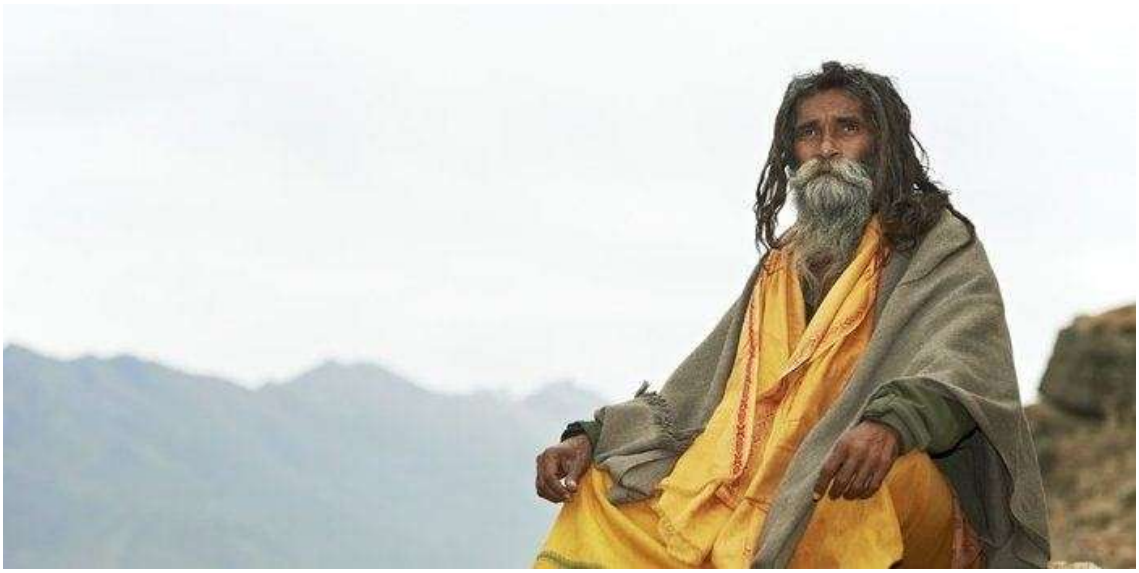
The Wise Man



People have been coming to the wise man, complaining about the same problems every time. One day he told them a joke and everyone roared in laughter.

After a couple of minutes, he told them the same joke and only a few of them smiled.

When he told the same joke for the third time no one laughed anymore.

The wise man smiled and said:

“You can’t laugh at the same joke over and over. So why are you always crying about the same problem?”

Moral of the story:
Worrying won’t solve your problems, it’ll just waste your time and energy.

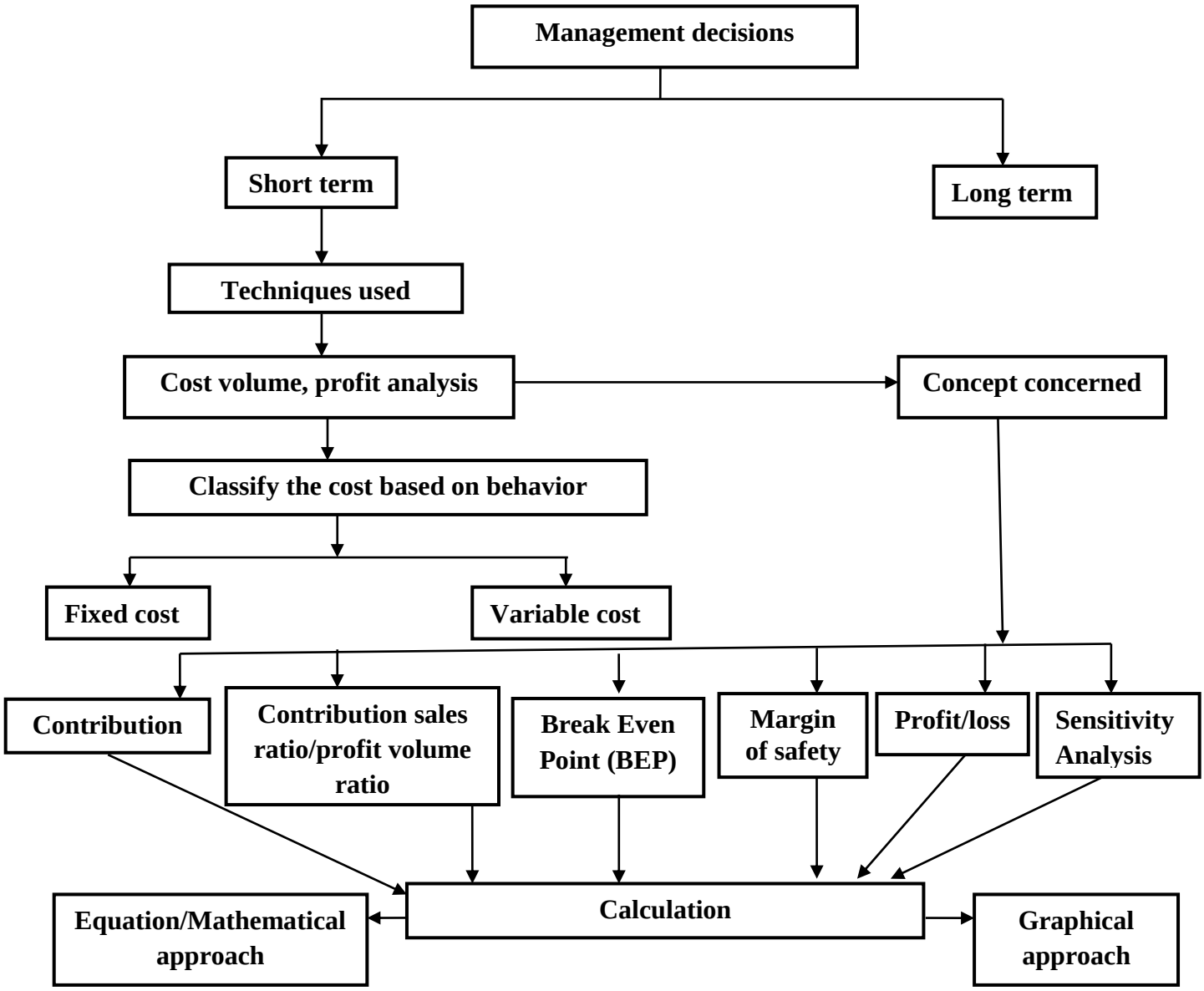
MARGINAL COSTING

- **Analyses the behaviour of cost**

Learning Outcomes :

- Classifies the cost based on behavior
- Explains the variable cost
- Explains the fixed cos
- Reviews the behaviour of cost through a graph

- **Session Guide**



- **Introduction**

Cost behavior of a manufacturing organization may change due to various factors. The cost of a manufacturing organization can mainly be divided into two namely fixed and variable. The cost which vary with the activity level or production volume are said to be **variable costs,** while the costs which do not vary with the activity level or production volume are known as **fixed costs**.

"The variable cost incurred for one unit of good or service" can be identified as marginal cost. In marginal costing, the difference between selling price and variable cost is known as "Contribution". It includes the fixed cost as well as the profit margin. Marginal costing techniques are used to take short-term decisions such as, whether goods are manufactured within the organization or bought from outside, whether some divisions of the organization are to be continued or closed down. Under marginal costing, considerable level of attention is given for the variable cost which is to be incurred.

- **Marginal Costing**

If we have obtained a factory under a rent agreement, the cost incurred (i.e. the rent expense) cannot be controlled and this factory rent does not vary based on the quantities manufactured by the organization. However, the direct cost such as materials and labour to be incurred based on the quantities manufactured by the organization, can be controlled.

Costs can be divided into following parts according to the behavior.

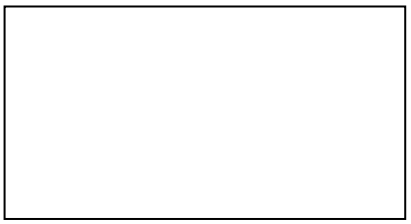
- …….
- …….
- …….

- **Fixed Costs**

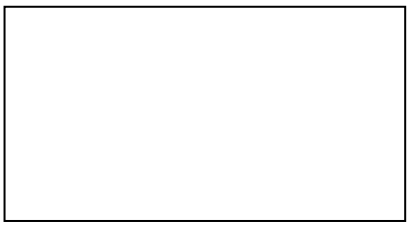
The costs which do not vary with the activity level or production volume are the fixed costs.
Examples: Machinery depreciation, Factory Rent Machinery Insurance.

Even enough the total fixed costs do not vary with the activity level, unit fixed cost reduces when the number of units increases as the fixed cost is apportioned by higher number of units.

Behaviour of total fixed costs



Behaviour of unit fixed costs



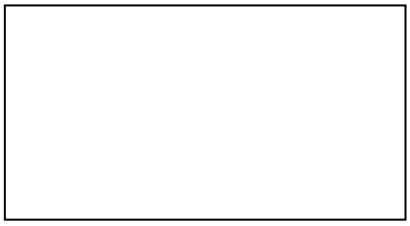
- **Variable Costs**

The costs which vary with the activity level or production volume are the variable costs.

Examples: Direct Materials cost : Wood for a chair
Direct labour cost: Carpenter's salary for a Chair
Direct expenses: Royalties paid on a chair manufactured

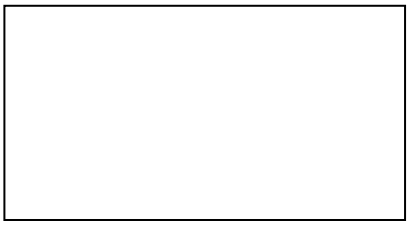
Behavior of total variable costs

Total variable costs increase proportionately with the production volume as shown in the following graph



Behavior of unit variable costs

Unit variable cost does not vary with the activity level. Following graph shows the behavior of unit variable cost



☞ADVANCED LEVEL – 2006

. Indicate the false statement in relation to behavior of fixed and variable costs?

(1) Total variable cost varies proportionately with changes in level of activity
(2) Unit variable cost remains constant with changes in level of activity
(3) Total fixed cost remains constant within a given range of activity levels
(4) Unit fixed cost remains constant within a given range of activity levels
(5) Unit fixed cost decreases with increases in the level of activity within a given range of activity level

(.....)

☞ADVANCED LEVEL – 2008

1. State whether the following statement is **true** or **false.**

Both total variable cost and unit variable cost remain unchanged when the production level increases.

(…….)

2. Production levels and unit cost of a product are given below:

Production Level (Units)	**Unit Cost (Rs)**
500	100
600	90

Which of the following gives the variable cost per unit and total fixed cost respectively?

(1) Rs. 40 and Rs. 30,000
(2) Rs. 10 and Rs. 50,000
(3) Rs. 40 and Rs. 54,000
(4) Rs 10 and Rs. 24,000
(5) Rs. 20andRs. 34,000

(…….)

3. Fill up the blanks in the table given below with appropriate values.

Production Level (Units)	**Unit Fixed Cost (Rs.)**	**Total Variable Cost (Rs.)**
……	40	4,000
100	32	……

Semi –fixed costs/Step Costs

If the costs vary step by step with the activity level, such costs can be identified as semi-fixed or step costs.

Example:

Assume that the monthly salary of a supervisor in a garment factory is Rs. 50,000 and he can supervise 20 employees only. Their monthly production is 4,000 units. If the company wants to double the production (to produce 8,000 units), the entity has to employ two supervisors. Accordingly, supervisor's salary will be Rs 100,000. Therefore, it is a semi-fixed cost

Following graph shows the behaviour of semi-fixed cost.

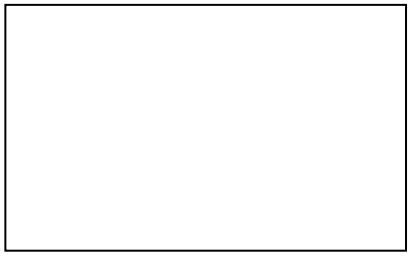
Semi – variable cost/Mixed costs

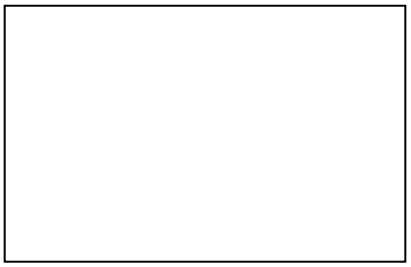
If a cost item includes both features of variable and fixed cost, such cost can be identified as semi - variable or mixed costs.

Example :

1. Telephone charges of the organization (Fixed charge and charges based on the usage of telephone line)
2. A van obtained under monthly rent of Rs. 30,000 and Rs 20 per kilometer travelled (Rs. 30,000 is a fixed cost and Rs 20 per kilometer travelled is variable cost)

Following graphs show the behavior of Semi-variable costs.





☞ADVANCED LEVEL – 2012

The cost data for a company at two levels of production are given below:

Cost Item	10,000 units (Rs.)	20,000 units (Rs.)
Direct Labour	30,000	60,000
Electricity	10,000	15,000
Factory Rent	15,000	15,000

Classify each of these cost items as fixed, variable or semi-variable

	Cost Item		Classification
(a)	Direct Labour	:	…….
(b)	Electricity	:	.....
(c)	Factory Rent	:	…….

Special Features in Marginal Costing

- All costs are classified as fixed costs and variable costs.
- Total fixed cost is charged against the Contribution of the period
- Inventories are valued at variable costs

☞ADVANCED LEVEL – 2017

Which of the following cost classification is more suitable for cost volume profit (CVP) analysis?

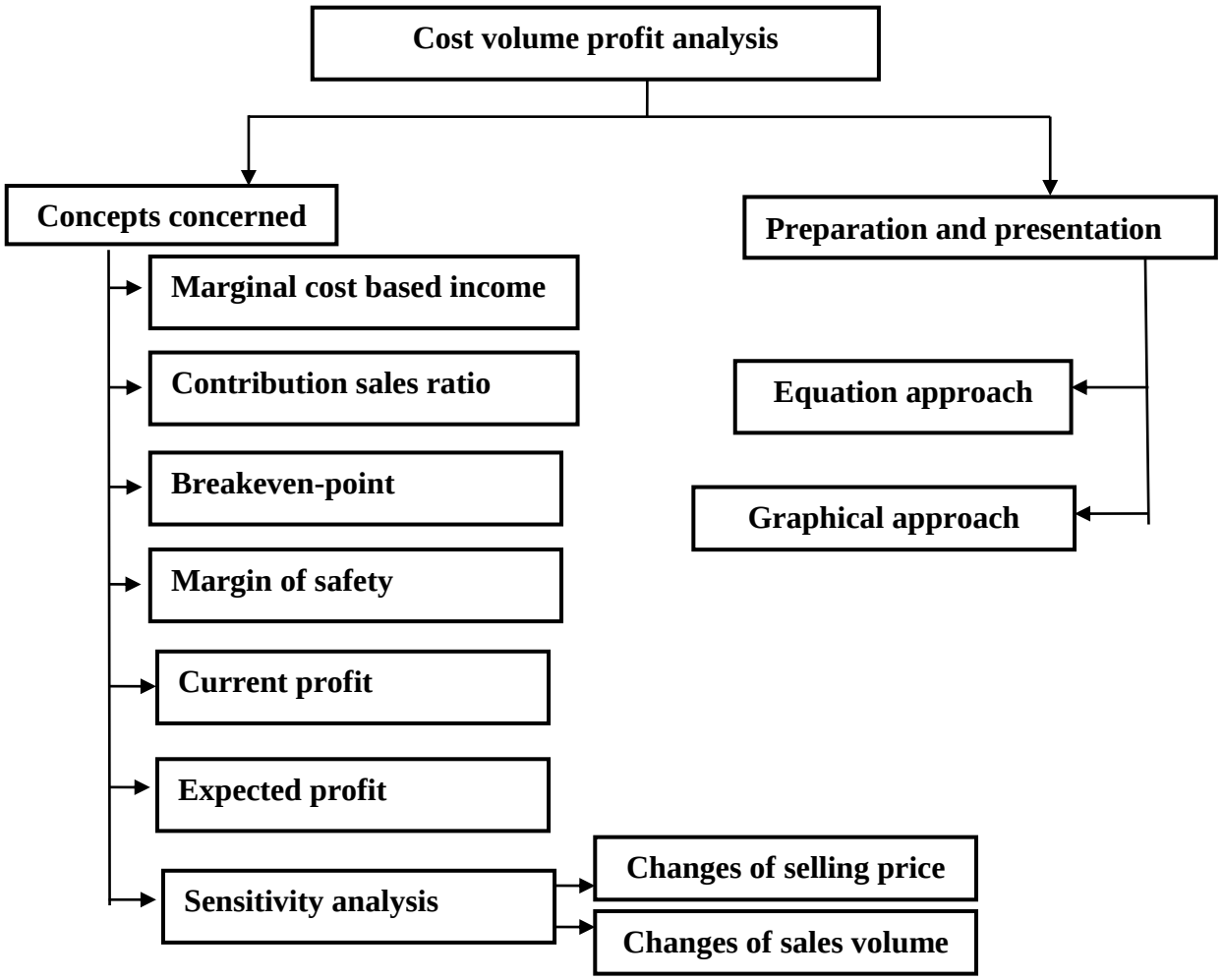
(1) Direct cost and Indirect cost
(2) Irrelevant costs and Opportunity cost
(3) Relevant cost and Irrelevant cost
(4) Relevant cost and Sunk cost
(5) Variable cost and Fixed cost

(.....)

- **Supports the decision making using cost volume profit analysis.**

Learning Outcomes :
- Calculates contribution per unit
- Calculates total contribution
- Makes decisions by calculating contribution sales ratio
- Calculates Break Even Point in units and in value
- Calculates margin of safety
- Presents cost volume profit analysis in equation form and graphical form.
- Decision making based on cost volume profit analysis
- Show the sensitive items in relation to changes of sales price and sales volume

- **Session guide**



Cost Volume Profit (CVP) Analysis

Information provided by marginal costing can be used for decision making. CVP analysis Is a method of studying the relationship among Cost, Volume and Profit under each activity levels. However, marginal costing is not a suitable method in making long-term decisions.

CVP analysis can be used in the following situations.
(i) Preparing budgets
(ii) Deciding sales quantity and prices
(iii) Deciding sales mix
(iv) Analyzing production capacity and cost structure

Assumptions used in CVP analysis
(1) Total cost can be classified as fixed and variable
(2) Fixed cost does not vary with the activity level
(3) Variable cost varies with the activity level
(4) Cost and income behave as linear functions
(5) Volume relevant to the activity level is the only factor which affects to the income and cost
(6) Technology, production methods and efficiency are fixed

Cost volume Profit (CVP) analysis can be explained in two ways.
(i) Equation approach
(ii) Graphical approach

Equation approach

Following concepts are important in studying costs, volume and profit (CVP) analysis.

- **Contribution**

Under marginal costing, total fixed cost of the period is charged against the contribution. The difference between selling price and the variable cost is known as the "Contribution".

Calculation of Contribution

Contribution is the term used to describe the difference between sales revenue and the variable cost.

Selling Price	=	XX
Less:		
Variable cost (Marginal cost)	=	(XX)

Contribution		XX
		===

Total contribution = Contribution per unit x Number of Units

Exercise 01

Selling Price per unit	=	Rs. 100
Variable cost per unit	=	Rs. 60
Sales	=	1,000 Units

Using above information.
Calculate (i) Contribution per unit
(ii) Total Contribution

Exercise 02

Selling Price per unit	=	Rs. 530
Variable cost per unit	=	Rs. 370
Sales	=	5,000 Units

Using above information.

Calculate (i) Contribution per unit
(ii) Total Contribution

☞ADVANCED LEVEL – 2011

The cost volume profit (CVP) analysis, contribution means the difference between

(1) Sales revenue and profit (2) Sales revenue and total costs
(3) Sales revenue and fixed costs (4) Sales revenue and variable costs

(……)

☞ADVANCED LEVEL – 2015

The following information is relevant for a company that manufactures a single product.

Variable cost per unit:		**Fixed cost:**	
Selling and Administration:	Rs. 20	Selling and Administration:	Rs. 120,000
Production :	Rs. 40	Production :	Rs. 150,000

The Company produced and sold 5,000 units and earned a profit of Rs. 180,000 at this level of activity. Calculate the following:

(a) Contribution per unit : **Rs…….**

(b) Selling price per unit **:** **Rs.....**

Income Statement based on Marginal Cost

Marginal costing records are important to provide information for the management to take short-term decisions, planning, calculation of costs and value the inventories Accordingly, the income statement under marginal costing can be prepared in the following manner.

Income Statement based on Marginal Cost

	Rs.	**Rs.**
Sales		XX
Less :		
Variable cost (Manufacturing)	XX	
Variable cost (Non-manufacturing)	XX	
	----	(XX)

Contribution		XX
Less :		
Fixed Production overheads	XX	
Fixed administration, distribution and overheads	XX	
	----	(XX)

Net operating **profit**		XX
		==

Exercise 03

Following information is relevant to a product called "Beta"

Sales	=	Rs.	150,000
Production cost			
- Variable cost	=	Rs.	52,500
- Fixed overhead	=	Rs.	22,500
Fixed administration and distribution cost	=	Rs	37,500
Variable administration and distribution cost	=	Rs.	7,500

Prepare the **income statement** under marginal costing approach.

Exercise 04

Following information is relevant to a product called "Alpha"

Sales	=	Rs.	500,000
Production cost			
- Variable cost per unit	=	Rs.	75,000
- Fixed overhead	=	Rs.	87,000
Fixed administration and distribution cost	=	Rs	69,000
Variable administration and distribution cost	=	Rs.	10,000

Prepare the income statement under marginal costing approach.

- **Contribution to Sales ratio (C/S ratio)**

The contribution is shown as a percentage.

$$\text{Contribution to sales ratio} = \frac{\text{Contribution per unit}}{\text{Selling price per unit}} \times 100$$

OR

$$\text{Contribution to sales ratio} = \frac{\text{Total Contribution}}{\text{Total Sales}} \times 100$$

$$\text{Contribution to Sales (C/S) ratio} = \frac{\text{Change in Contribution or Profit}}{\text{Change in Sales}} \times 100$$

Exercise 05

Selling Price per unit	=	Rs. 400
Variable cost per unit	=	Rs. 200
Total fixed cost	=	Rs. 200,000
Sales	=	5,000 units

Using above information.

Calculate

(i) Contribution per unit
(ii) Total Contribution
(iii) Contribution to sales ratio

☞ADVANCED LEVEL – 2017

The following information related to a product manufactured by a company.

Variable cost per unit - Rs. 150 Contribution sales ratio - 40%

The company wishes to increase the contribution sales ratio to 60% by increasing the selling price while variable cost per unit remains constant. What would be the new selling price of the product?

(1) Rs. 210 (2) Rs. 240 (3) Rs. 250 (4) Rs. 275 (5) Rs. 375

(.....)

- **Break – Even Point (BEP)**

Break Even Point is the activity level in which the total cost and the total income are equal in BEP, the business runs with neither profits nor losses. It can be expressed by way of sales quantities or sales value.

$$\text{BEP (in Quantities)} = \frac{\text{Total Fixed Cost}}{\text{Contribution per Unit}}$$

$$\text{BEP (in rupees)} = \frac{\text{Total Fixed Cost}}{\text{Contribution to Sales ratio (C/S ratio)}}$$

$$\text{BEP (in rupees)} = \text{BEP(Q)} \times \text{Selling price}$$

Exercise 06

Selling Price per unit	=	Rs.1,500
Variable cost per unit	=	Rs.500
Total fixed cost	=	Rs.1,000,000
Sales	=	1,500 units

Using above information.

Calculate
(i) Contribution per unit
(ii) Total Contribution
(iii) Contribution to sales ratio
(iv) Break- Even point (in units)
(v) Break-Even points (in rupees)

At break-even point,

- total income is equal to total expense.
- Total income means total revenue and total expense consist of total variable cost and total fixed cost
- Accordingly, at break-even point.

Total Income	=	Total Variable Cost	+	Total Fixed Cost
Total Fixed Cost	=	Total Income	-	Total Variable Cost
As. Total Contribution	=	Total Income	-	Total Variable Cost
Total Contribution	=	Total Fixed Cost		

- Therefore, at break-even point, **Total Contribution = Total Fixed Cost**
  Contribution per unit = Average fixed cost

- **Computation of Net Profit**.

Contribution is arrived at, after charging all variable costs (In other words, an entity has a contribution means, it has already covered its total variable cost)
Then, the company has to cover the fixed costs from its contribution.
If there is any amount remaining, even after fixed costs are covered, it can be identified as **"Net Profit".**

Net Profit	=	Total Income	-	Total Cost
Net Profit	=	Total Income	-	(Total Variable Cost +Total Fixed Cost)
As. Total Contribution	=	Total Income	-	Total Variable cost
Net profit	=	Total Contribution	-	Total Fixed Cost

Exercise 07

Selling Price per unit	=	Rs. 600
Variable cost per unit	=	Rs. 300
Total fixed cost	=	Rs. 300,000
Sales	=	3,000 units

Using above information.

Calculate (i) Contribution per unit
(ii) Total Contribution
(iii) Contribution to sales ratio
(iv) Break- Even point (in units)
(v) Break-Even points (in rupees)
(vi) Net Profit.

☞ADVANCED LEVEL – 2006

Which of the following statements is false in relation to the break-even point?

(1) Total revenue equals total costs
(2) Total contribution equals total fixed cost
(3) Total variable cost equals total fixed cost
(4) Unit contribution equals unit fixed cost
(5) There is no profit or loss **(.....)**

- **Margin of Safety**

The difference between budgeted (or actual) sales volume and breakeven sales volume is known as the margin of safety. It indicates the vulnerability of a business to a fall in demand or production. This can be expressed as a ratio or number of units.

(i) Margin of Safety (in units) = Budgeted or actual sales (in units) - BEP sales (in units)

(ii) Margin of Safety (in rupees) = $\frac{\text{Net Profit}}{\text{Contribution to sales ratio}}$

OR

Margin of Safety (in rupees) = Margin of safety (in units) x selling price

(iii) Margin of Safety ratio = $\frac{\text{Margin of safety}}{\text{Actual or Budgeted sales}} \times 100$

		Units
Budgeted Sales	=	4,000
BEP Sales	=	3,000
Margin of safety (units)		1,000

Margin of safety (as a percentage of budgeted sales) = $\frac{1,000}{4,000} \times 100 = 25\%$

Exercise 08

		Rs
Selling Price per unit	=	400
Variable cost per unit	=	250
Total fixed cost	=	300,000
Sales	=	2,800 units

Using above information, **Calculate**

(i) calculate contribution per unit
(ii) total contribution
(iii)contribution to sales ratio

(iv)break – even point (in units) and break-even point (in rupees),
(v) Net profit
(vi) margin of safety(in units) and margin of safety (in rupees)

An entity has to earn profits to continue the business. However, in break-even point, sales income is equal to the total expenses of the business. It means, there are no profits or losses when the total income is equal to the total expense.

Therefore, an entity has to make sales by exceeding the break-even point to earn profits. If the sales income is less than its break-even sales, the organization has to face losses, due to unrecovered fixed cost from the contribution.

However, if the entity can exceed its breakeven sales, it has to cover only the variable costs. Therefore, the contribution which exceeds the break-even point can be identified as profits. It means, the contribution included in Margin of Safety is equal to the Net Profit of the entity.

Net profit = Margin of Safety Quantity x Contribution per unit

- **Calculation of sales quantity and sales value to earn an expected profit**

Using CVP analysis, we can calculate the sales required to earn an expected or targeted profit.

$$\text{Sales (units) required} = \frac{\text{Fixed Cost + Expected profit}}{\text{Contribution per unit}}$$

$$\text{Sales (Rupee) required} = \frac{\text{Fixed Cost + Expected profit}}{\text{Contribution to Sales ratio}}$$

Exercise 09

		Rs
Selling Price per unit	=	1,000
Variable cost per unit	=	250
Total fixed cost	=	1,500,000
Expected Sales	=	50,000 units

Using above information, **calculate**

(i) Contribution per unit
(ii) Total contribution
(iii) Contribution to sales ratio
(iv) Break – even point (in units) and Break-even point (in rupees)
(v) Net profit
(vi) Margin of safety (in units) and Margin of safety (in rupees)
(vii) Income statement for the expected sales
(viii) Number of units to earn a profit of Rs. 1,500,000

Graphical Approach

Instead of using equation approach for the analysis of Cost Volume Profit (CVP), we can use the graphical approach. Following steps can be taken when constructing a CVP graph.

1. **Drawing the axes**
   Horizontal axis - The activity level is shown using production units.
   Vertical axis - Vertical axis shows the cost and the income/revenue/profit

2. **Drawing the cost curves**
   Fixed cost - As fixed cost does not change with the activity level, it is a straight line which is paralled to the horizontal axis.
   Total cost - The total cost curve starts from the point at which the fixed cost curve touches the vertical axis and slopes (upward) as a straight line)

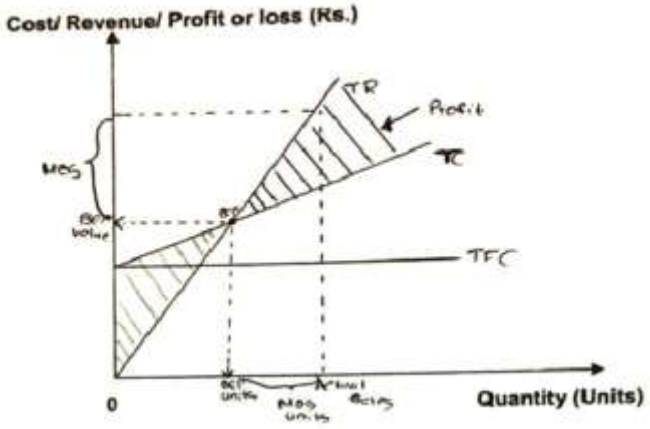
3. **Drawing the sales/revenue curve:**
   Total Revenue – The total revenue curve starts from the origin and slopes (upward) as a straight line)

CVP charts can be drawn as:

- Traditional Break-Even-Charts
- Contribution Break Even Charts
- Profit Volume Charts

Traditional Break-Even-Chart

Traditional breakeven-chart is constructed using total revenue, total cost and fixed cost as shown Below :



Exercise 10

Dilshan Limited produces one product only. The annual capacity of t he company is 400,000 units and expected sales are 250,000 units. Revenue and cost data are given below

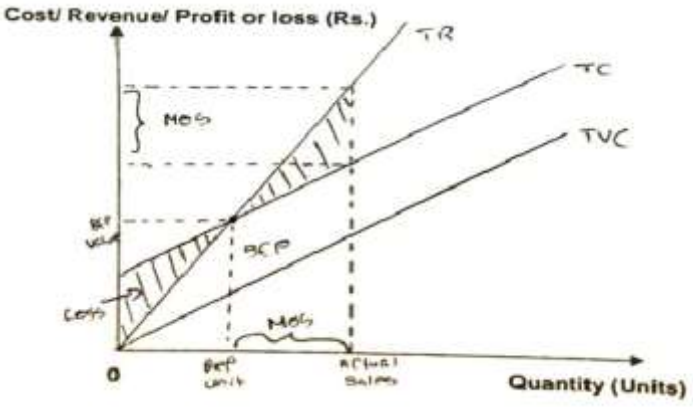
Selling Price per unit	=	Rs.1.00
Marginal (Variable) cost per unit	=	Rs.0.50
Total fixed cost	=	Rs.100,000

Using above information

(1) Draw the traditional Break-Even-Chart
(2) Mark the following points clearly on the chart
   (a) Break-Even point (in units and value)
   (b) Margin of Safety
   (c) Profits and losses areas

Contribution Break-Even Chart

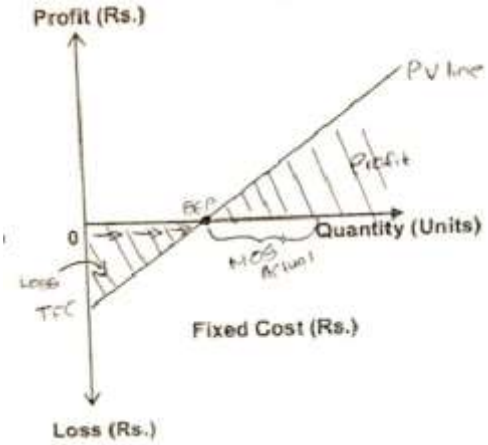
Contribution break-even-chart is constructed using the variable cost shown in the following diagram.



In the traditional break-even chart, we are unable to identify the contribution at various output levels. However, contribution break-even chart clearly shows the contribution at each levels of output. This is a development of the traditional break-even chart and the contribution can be directly identified in the graph, as it has the variable cost curve.

Profit Volume Chart

Traditional Break-Even Chart and Contribution Break-Even chart show costs and revenue over a given level of activity. They do not highlight directly the amounts of profits or losses at the various activity levels. The chart which shows the net profit or loss any given level of activity can be identified as a Profit Volume Chart or Profit Volume Graph.



Limitations of CVP Analysis

- Classification of all costs as variable costs and fixed cost is not practical.
- When the volume increases, the fixed costs may also increase. Therefore, assuming that the fixed costs remain unchanged may not always be accurate.
- When the volume change, the variable cost and the selling price per unit may change. Accordingly, assuming that the variable cost and the selling price per unit remain unchanged may not always be accurate.

- **Sensitivity Analysis**

Analysis of the changes in different variables which affect the net profit is known as sensitivity analysis. These variables are:

1. Selling price
2. Sales volume

in the sensitivity analysis, the change in one variable is analyzed at a point, assuming other factors remained unchanged (Fixed/Constant).

Exercise 11

Following cost estimates have been extracted from a company which manufactures product A

Selling Price per unit	=	Rs. 35
Raw materials cost per unit	=	Rs. 8 (2 Kgs.)
Direct labour cost per unit	=	Rs. 5 (1 hour)
Other direct cost per unit	=	Rs. 2
Monthly fixed cost	=	Rs. 240,000
Monthly sales	=	32,000 units

Required :

(i) Contribution per unit
(ii) Break – even point (in units)
(iii) Margin of safety (in units)
(iv) Net profit
(v) The marketing manager expects to increase the selling price upto Rs. 45. Calculate the followings after the changing the selling price.
   (a) Contribution per unit (b) Break-even point in units
   (c) Margin of safety in units (d) Net profit
   (e) Effect to the net profit due to the increase in selling price

Based on the above calculations, you can come to following conclusions.
When the **selling price per unit increases**:

- Break-even number of units decreases
- Margin of safety increases
- Expected profit increases

Change in Sales Volume

Exercise 12

Assume in the above company (mentioned in the Example 17), the sales volume has decreased from 32 000 units to 25 000 units, calculate

1. New margin of safety
2. New profit

When the **sales volume comes down**

- No change in break – even point
- Margin of safety decreases
- Expected profit decreases

When other factors remained unchanged, the change in selling price and the sales volume in one occasion will affect the break-even point and the profit in the following manner:

Description	Break-Even-Point Value			Profit	
Selling Price	Increase	→	Decrease	→	Increase
	Decrease	→	Increase	→	Decrease
Sales Volume	Increase	→	No change	→	Increase
	Decrease	→	No change	→	Decrease

☞ADVANCED LEVEL – 2006

The Past Students Association of a school is planning to have its annual get-together.The organizing committee has estimated the following revenue and costs for the event.

Revenue	:	It is expected that 500 persons will participate. The price of a ticket is Rs. 900
Variable Cost	:	**(per participant)**
		Rs.
Foods and beverages	-	400
Souvenir	-	50
Gifts	-	150
		600
		===
Fixed Cost		**Rs.**
Hall rent	-	10,000
Musical Group	-	8,000
Publicity	-	4,000
Decorations	-	2,000
Sounds	-	1,000
Other expenses	-	5,000
		30,000
		=====

Required:

(1) Compute Contribution per participant
(2) Compute break-even point (number of persons)
(3) Compute break-even point (Rupees)
(4) Compute margin of safety (number of persons)
(5) Compute the profit assuming that 500 participants will attend the function
(6) Draw a rough sketch of break-even chart for the annual get-together and mark the following (already computed above) on it.
    (a) Break-even points (number of persons)
    (b) Margin of safety (number of persons)
    (c) Net profit if 500 participants attend the function (Note Graph paper is not required)
(7) Compute the impact on the profit calculated in (5) above, if only 400 participants attend the function.

☞ADVANCED LEVEL – 2007

The following details relate to Lanka Enterprises, a shop which sells a unique type of shoe. In the current year they expect to sell 25,000 pairs of shoes.

Selling price per pair of shoes	-	Rs.800
Purchase cost per pair of shoes	-	Rs.300

Total annual expected fixed costs

Salaries	-	Rs.2,000,000
Advertising	-	Rs.1,000,000
Other fixed expenses	-	Rs.2,000,000

Required:

(1) The Break-even points in number of pairs of shoes and in value
(2) The Margin of Safety in number of pairs of shoes and in value
(3) The expected annual profit or loss
(4) If a selling commission of Rs. 50 per pair of shoes is introduced, calculate the numbers of pairs of shoes that should be sold in order to earn an annual profit of Rs. 4,000,000.
(5) Calculate the new Break-Even-Point in number of pairs of shoes, assuming that an additional advertising expenditure of Rs. 3,100,000 has to be incurred and also that selling price will be increased by 5% during the year.(in answering, each question should be considered as independent from the others)

☞ADVANCED LEVEL – 2008

The following information is given with respect to products A and B manufactured by Anoma and Company and Basil and Company respectively

	Product A	**Product B**
Unit selling price (Rs.)	50	30
Unit variable Cost (Rs.)	40	9
Budgeted monthly sales (units)	50,000	20,000
Monthly fixed cost (Rs.)	350,000	200,000

Required:

(1) Compute the contribution to sales ratio for both products.
(2) Which company would earn the higher total monthly contribution?
(3) Compute the break-even-point in units for product A
(4) Compute the total profit expected from product B based on the budgeted sales volume
(5) Draw a profit volume chart for product A showing the profit expected at the budgeted sales volume (Note: Graph paper is not required)
(6) How much should be the expected monthly sales value for product B if the target profit per month is Rs. 150,000?
(7) Determine the new break-even point of product A in sales value if its selling price would reduce to Rs. 45.
(8) Anoma and Company plans to introduce new technology to reduce the variable cost. This wills double the monthly fixed cost. What is the minimum amount by which the unit variable cost of product A should decrease if the company wants to maintain the same break-even point computed under (3) above ?

☞ADVANCED LEVEL – 2009

Anura PLC, manufactures and sells a single product.

(i) The some details relevant to the product are given below:

Direct material (3kgs. per unit)	-	Rs.24 per unit
Variable overheads	-	Rs.16 per unit
Direct labour (2hrs per unit)	-	Rs.30 per unit
Selling price	-	Rs.80 per unit
Annual product and sales	-	20,000 units
Annual fixed overheads	-	Rs.120,000

(ii) The company has decided to carry out a sales promotion campaign in the next year by considering the following:

- To spend additional advertisement expenses of Rs. 40,000
- To increase the weight of the product by adding 0.5 kg of raw material

- To keep the current selling price unchanged

(iii) It is expected that this campaign would increase the annual sales volume to 50,000 units

(iv) The wage rate would increase to Rs. 16 per hour due to a new labour law.

Required:

(1) Contribution per unit of the product at present and in the next year.

(2) Break-even-point in sales value for the next year

(3) Margin of safety at present and next year in units

(4) Indicate where the company earns a higher profit at present or next year based on your answer to (3) above.

☞ADVANCED LEVEL – 2010

The following information has been gathered with regard to an educational tour organized by the Committee Society of a school

		Rs.
• Transportation cost per bus with a seating capacity of 60 passenger	-	15,000
• Cost per identification badge to be worn by every student	-	15
• Printing cost of the tour banners	-	3,500
• Cost of organizing the entire trip	-	2,500
• Meals cost per student	-	230
• Cost of Water bottle per student	-	80
• Tickets cost per student to visit all the places arranged	-	75
• Charges for the photographer hired	-	3,000
• Fee to be charged from one student	-	1,000

It has been decided to credit any excess of the trip to the general fund of the Commerce Society

Required:

(1) Expected total fixed cost of the trip

(2) Number of students to participate in the trip to break-even

(3) Number of students to participate in the trip to generate an excess of Rs. 6,000

(4) **Two** suggestions to increase the amount to be transferred to the general fund of the commerce society assuming that the fixed cost of the trip cannot be reduced.

(5) A statement showing the excess or shortage from the trip, if the number of students to participate is 60

(6) The fee to be charged from one student in order to break-even if the number of students to participate is 30

☞ADVANCED LEVEL – 2011

The following information relates to product at the expected sales volume of 12,000 units.

Profit	-	Rs.400,000
Fixed cost	-	Rs.200,000
Contribution to Sale ratio	-	20%

Required:

(1) Total contribution at the sales volume of 12,000 units

(2) Sales value at the break-even-point

(3) Margin of safety

(4) Net impact to the profit if a sales commission of Rs. 10 per unit is paid and as a result if sales volume increases to 15,000 units.

(5) Breakeven point graph by indicating the break-even- points (BEP) without and with sales commission (Use total revenue (TR) curve and total cost (TC) curve. Scale is not required)

☞ADVANCED LEVEL – 2012

The Commerce Society of a school in Kandy is organizing a three day educational trip to Jaffna. The society has a balance of Rs.20,000 in its bank account and the members have agreed to spend it for hiring buses for travel.

The following estimates are also available.

Hiring charges for buses	-	Rs.45,000 per bus (50 students per bus)
Rent for the guest house for 3 days	-	Rs.20,000 per guest house (25 students per guest House)
Meal expenses	-	Rs.600 per day per student
Water bottle expenses	-	Rs.200 per day per student
Other expenses	-	Rs.600 per student

Assume that 100 students will participate in the trip.

Required:

(1) In order to reach the break-even level with 100 students, what is the amount of money to be charged from each student?

(2) If there is a surplus the society is willing to donate this money to religious places during the trip. What is the amount that can be donated if Rs.5,000 is charged per student?

☞ADVANCED LEVEL – 2013

Roshan is planning to start a vehicle hiring business for weddings by using his luxury motor vehicle. The following are the estimated expenses for t he motor vehicle:

• Insurance per year	-	Rs.58,000
• Revenue license fee per year	-	Rs.8,000
• Repair and maintenance charges per month	-	Rs.5,000
• Annual depreciation	-	Rs.500,000
• Drivers salary	-	Rs.9,000 per month plus 10% of the hiring income
• Petrol Cost	-	Rs.20 per kilometre

The following estimates have also been made :

• Annual administration expenses	-	Rs.50,000
• Motor vehicle hiring income	-	Rs.100 per kilometer

Required:

(1) The number of kilometers to be run to cover the annual cost of the business.

(2) The number of kilometers to be run if an annual profit of Rs. 350,000 is expected from the business.

☞ADVANCED LEVEL – 2014

A company has undertaken to introduce and sell a new product at a trade exhibition to be held for 10 days. This product is provided to the company by its supplier at a cost of Rs. 4,500 per unit. Although a unit of this product is expected to be sold at a price of Rs. 8,000 a 20% discount on this price will be offered at the exhibition. The expected costs are as follows:-

Description		**Rs.**
Rent for the stall	-	40,000
Printing cost of leaflets	-	5,000
Allowance to the manager of the stall	-	25,000
Allowance to a sales assistant (per day)	-	1,000
Price of a cup gifted with every unit of the product sold	-	100

Two sales assistants will be recruited for the period

Required:

(1) Total fixed costs of the activity.
(2) Units to be sold to cover the total cost of the activity
(3) Units to be sold to earn a profit of Rs. 270,000
(4) Profit earned at 100 units of sales when a 10% commission on the selling price is paid to the manager for every unit sold (In addition to the allowance paid to the manager)

☞ADVANCED LEVEL – 2015

Mr. Nagendran is planning to start a private school in Colombo. The expected income and costs of the school are as follows:

Fees per student		
Registration fee	-	Rs.12,000 per annum
Facilities fee	-	Rs.12,000 per annum
Course fee	-	Rs.10,000 per month
Costs		
Printing of course manuals	-	Rs.4,000 per month per student
Stationery	-	Rs.3,000 per month per student
Sports Expenses	-	Rs.1,000 per month per student
Rent of the building	-	Rs.40,000 per month
Salaries	-	Rs.30,000 per month
Advertising and promotion	-	Rs.10,000 per month

Required:

(1) Annual contribution per student
(2) Annual total fixed cost of the school
(3) The number of students required to be admitted to cover the total annual cost
(4) The number of students required to be admitted to earn a profit of Rs. 240,000
(5) If 50 students are admitted and the course fee of 10 of them are waived off. The expected profit or loss.

☞ADVANCED LEVEL – 2016

A teachers Welfare Society of a school is organizing a get-together for its members. Its members consists of 120 teachers presently in service and 30 retired teachers. The following expenses have been estimated for this event.

		Rs.
Refreshments	-	1,100 per member
Souvenir	-	225 per member
Gift pack	-	775 per member
Hotel charges	-	35,000
Hall Decorations	-	5,000
Sound system hire charges	-	2,000
Event organizing expenses	-	3,000

The society intends to sell tickets to all teachers participating in the event including the retired teachers. A ticket is priced at Rs.3,000. The surplus money will be used for charity.

Required:

(1) Contribution per teacher
(2) The number of teachers required to attend to cover the total cost
(3) The amount of money to be donated for charity if all the teachers participate
(4) The number of teachers required to attend in order to donate Rs. 27,000 for charity
(5) The lowest price at which a ticket can be sold if all teachers participate
(6) The number of tickets to be sold to cover the total cost if retired teachers need not buy tickets and 24 of them are expected to attend

☞ADVANCED LEVEL – 2017

A company is planning to manufacture computers by assembling imported components for the use of differently abled school children. The selling price of a computer is decided to be Rs. 50,000 and the expected costs are as follows: -

License Fees	-	Rs.50,000 per month
Salaries		
Supervisors	-	Rs.80,000 per month
Assembly workers	-	Rs.8,000 per unit
Rent	-	Rs.360,000 per annum
Insurance	-	Rs.40,000 per month
Material cost	-	Rs.12,000 per unit
Fees for two consultants	-	Rs.100,000 per month

Required:

(1) Monthly total fixed cost (indicate each item separately)
(2) Number of computers to be sold monthly to cover the total cost
(3) Number of computers to be sold monthly to earn a profit of Rs. 150,000
(4) Number of computes to be sold monthly to cover the total cost if the assembly workers are paid a total monthly salary of Rs.80,000 instead of a unit-based salary
(5) Number of computers to be sold monthly to cover the total costs if the salary paid to an assembly worker could be reduced to Rs. 3,000 per unit by automating the assembly line. It is estimated that this automation would increase the annual fixed costs by Rs. 180,000

☞ADVANCED LEVEL – 2018

a) The annual operating capacity of a company which produces a single product is 1 500 units. The budgeted information of the product for the year 2019 is given below:

Annual production and sales ..... 1 200 units

	Rs. per unit:
Selling price	1 200
Direct material	160
Direct labour (paid on unit basis).....	180
Variable production over heads	100
Variable non-production overheads	200

Annual fixed production overheads. .... Rs. 132 000
Annual fixed non-production overheads ..... Rs. 180 000

Required:

(1) Variable cost per unit
(2) Production cost per unit
(3) Profit per unit
(4) Total cost at the activity level 1 500 units

(b) An education institute in Kandy is planning to introduce a Diploma Programme in Accounting. It will be conducted during week-ends in rented premises. This programme consists of 10 subjects and each subject will be taught for 15 hours. The duration of the programme is 6 months. Further, each student should submit a project report at the end of the program.

The budgeted income and expenses of this programme is given below:

Income:

Programme fee	Rs.	60 000 per student
Examination fee	Rs.	5 000 per student

Expenses

Payment for lecturers:

Lecture fees	Rs. 2 000 per hour
Assignment marking fees	Rs.600 per student per subject
Project report evaluation fees	Rs.10 000 per report
Study material cost	Rs. 500 per student per subject
Programme manager's salary	Rs. 45 000 per month
Rent for the building	Rs. 40 000 per month
Operating expenses	Rs.70 000 for the six month period
Examination expenses	Rs. 400 per student per subject

Required:

(1) Contribution per student
(2) Total fixed cost of the programme
(3) The number of students to be enrolled to cover the total cost of the programme
(4) The number of students to be enrolled to the programme to earn a profit of Rs. 200 000
(5) The minimum programme fee to be charged from a student if the expected profit and the number of students to be enrolled are Rs. 350 000 and 30 respectively

☞ADVANCED LEVEL – 2019

A school is planning its annual staff trip. The following information has been estimated for the trip by the accounting teacher of the school

Fee charged per teacher	Rs.	1 500
Hiring charge per bus with a seating capacity of 40	Rs.	40 000
Allowance for the driver and the assistant per bus	Rs.	2 000
Refreshment expenses per teacher		?
Number of teachers required to cover the total cost		100
Maximum number of teachers expected for the trip		120

The number of teachers travelling per bus is limited to its seating capacity.

Required:

(1) Total fixed cost for the trip
(2) Contribution per teacher
(3) Refreshment expenses per teacher
(4) Margin of safety of the trip (number and rupee value)
(5) Surplus of the trip if the maximum number of teachers expected participate
(6) The fee charged per teacher to cover the total cost if only 90 teachers participate

☞ADVANCED LEVEL – 2020

A welfare society has decided to print a hand book containing advices to protect from COVID-19 virus. It is expected to distribute this handbook free of charge to persons in quarantine centres with a pair of gloves and a face mask. A soap manufacturing company has agreed to provide a sponsorship of Rs. 1 500 for each beneficiary participates in this programme.

The estimated costs of this programme are as follows:

Advising fee of doctors for the preparation of the handbook	30 000
Printing cost per handbook	700
Editing cost of the handbook	25 000
Cost of writing a chapter (The handbook consists of 07 chapters)	10 000
Cost of drawing pictures of the handbook	10 000
Typing cost per page (The total number of pages of the handbook is 50)	300
Cost of pair of gloves	100
Cost of a face mask	200

Required

(1) Total fixed cost and the variable cost per beneficiary

(2) To cover the total cost of this programme:
   (i) The expected number of beneficiaries
   (ii) The expected sponsorship from the soap manufacturing company

(3) The expected number of beneficiaries to obtain a surplus of Rs. 100 000 to the welfare society fund from this programme.

(4) If a sponsorship of Rs. 900 000 is provided for this programme by the soap manufacturing company, the surplus that could be obtained for the welfare society fund

☞ADVANCED LEVEL – 2006

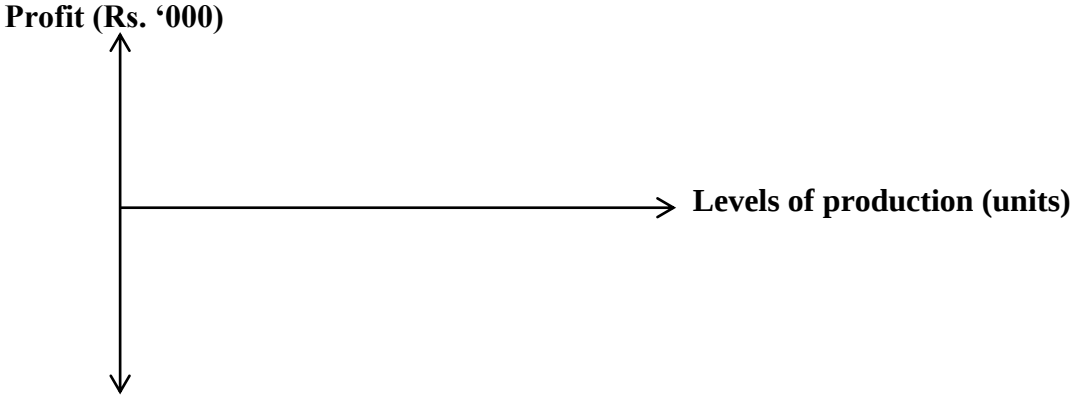
1. A break even chart prepared for a manufacturing company does not show
   (1) Total variable cost at different levels or production
   (2) Margin of safety
   (3) Loss incurred at zero level of production
   (4) Unit profit of loss at different levels of production
   (5) Total revenue at different levels of production **(.....)**

2. State two assumptions of the break even analysis
   (1**) .....**
   (2) .....

3. State two ways of bringing down the breakeven point of a manufacturing company
   (1) **.....**
   (2).....

4. Plot the following information on the profit volume graph given below and mark the break-even point

Level of production (Units)	Profit/(Loss) (Rs. '000)
0	(30)
35	50



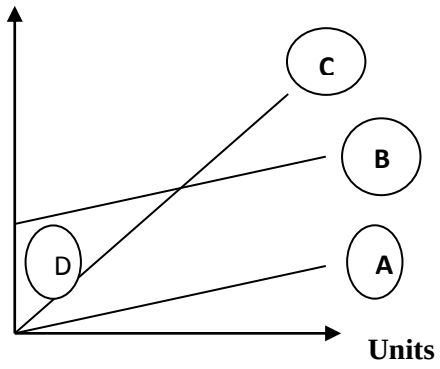
☞ADVANCED LEVEL – 2007

State True or False

1. All direct costs are variable costs. **(.....)**

2. State what is meant by A B C and D in the following break even diagram

Value (Rs.)



(1) A = ...
(2) B = ...
(3) C = ...
(4) D = ...

3. Sate the effect (increase, decrease no change) of each of the following conditions on the breakeven point (BEP)

		The effect on the BEP
(1)	An increase in selling price	.....
(2)	An increase in Sales volume	.....

☞ADVANCED LEVEL – 2008

1. . What is meant by the tem Margin of Safety in cost volume profit analysis?
   (1) The profit margin of a product sold by an organization
   (2) Total profit earned by an organization at the current level of sales
   (3) The sales revenue that exceeds the breakeven point
   (4) Another name used for the sales value at the breakeven point
   (5) The insurance premium paid for the safety of the company

State True or False

2. Both total variable cost and unit variable cost remain unchanged when the production level increases. **(.....)**

3. Break even point is not affected when the sales volume increases while other factors remain unchanged **(.....)**

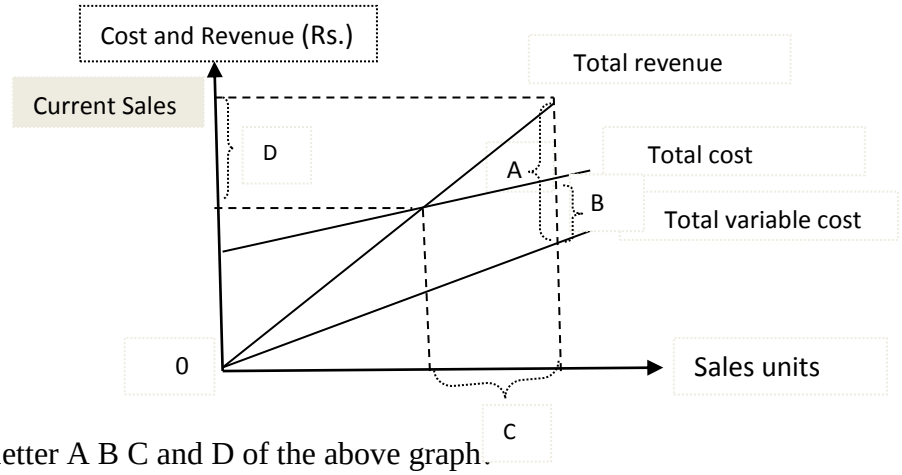
☞ADVANCED LEVEL – 2009

1. A company manufactures a unique product and sells it at a price of Rs. 100 per unit. Fixed costs are Rs. 35 000 and variable cost per unit is Rs. 60. What level of sales in units will generate a profit of Rs. 5 000?
   (1) 550 units (2) 667 units (3) 850 units
   (4) 875 units (5) 1 000 units **(.....)**

2. The total production costs of a company were Rs. 50 000 and Rs. 115 000 when production volumes were 8 000 units and 20 000 units respectively. When the production volume exceeds 10 000 units, an extra fixed cost of Rs. 5 000 is required. What is the total production cost when 15 000 units are produced?
   (1) Rs. 75 000 (2) Rs. 85 000 (3) Rs. 90 000
   (4) Rs. 91 250 (5) Rs. 96 250 **(.....)**

3. The following graph depicts the costs and sales revenue of a company

(1) Rs. 150
(2) Rs. 200
(3) Rs. 4 000
(4) Rs. 5 000



What is characterized by the each letter A B C and D of the above graph.

A .....
B .....
C .....
D .....

4. Margin of safety of a company which sells single product, was 20% of its current sale. Profit volume ratio and current sales level were 40% and Rs. 200 000 respectively. Compute the following

(a)	Fixed cost	Rs.	.....
(b)	Profit at the current level of sales	Rs.	.....

5. The break-Even-Point of a firm changed from 1 000 unit to 1 250 units when the selling price was changed while all other relevant factors remaining unchanged. Total fixed cost and unit variable cost were Rs. 10 000 and Rs. 20 respectively.
   (a) What is the new selling price per unit?
   .....

   (b) State whether this change in selling price is an increase or decrease, when compared with the old price.
   .....

☞ADVANCED LEVEL – 2010

1. What is the total contribution if the following information relates to a single product?
   Fixed overheads - Rs. 400 000
   Margin of safety - Rs. 200 000

Contribution to sales (C/S) ratio 40%

(1) Rs. 200 000 (2) Rs. 240 000 (3) Rs. 400 000
(4) Rs. 480 000 (5) Rs. 600 000

(……..)

2. Which of the following statements is true in relation to Cost Volume Profit (CV) analysis?
   (1) It is essential to have a margin of safety in order to generate a profit
   (2) At the Break-Even-Point (BEP), fixed cost is less than the total contribution
   (3) Margin of Safety refers to the profit at a given volume of operations
   (4) Variable cost per unit varies when the column of operations change
   (5) Contribution to Sales (C/S) ratio refers to the variable cost as a percentage of selling price

(……..)

3. Break-Even-Point (BEP) of a product changed from 2000 to 2500 units when the selling price was changed while other factors remaining constant. The fixed cost was Rs. 100 000. State the amounts by which the unitselling price was increased or decreased?

.....

State True or False

4. Total sales revenue is equal to the summation of total contribution and total variable cost at the Break-Even-Point (BEP). **(.....)**
5. All direct costs are variable costs **(.....)**

☞ADVANCED LEVEL – 2011

The following information relates to a particular product.

Total cost when 50 units are sold	-	Rs.	65 000
Total cost when 75 units are sold	-	Rs.	90 000
Contribution to Sales Ratio (CS Ratio)	-	50%	

1. Compute the number of units that should be sold in order to earn a profit of Rs. 125 000

.....

2. An entity sells a product at a price of Rs. 50 per unit. The contribution to sales ratio of the product is 40% Current sales volume is 11 000 units and it is considering the following sales strategies. The entity is earning a profit at the current sales volume.

Strategy 1 : To increase the selling price up to Rs. 55 per unit (This will reduce the sales volume to 900 units)

Strategy 2 : To reduce the selling price up to Rs. 45 per unit (This will increase the sales volume upto 1600 units)

(a) Indicate whether the profit will increase or decrease by how much if the strategy 1 is adopted?

.....

(b) Which strategy is more profitable to the entity?

.....

☞ADVANCED LEVEL – 2012

1. A company produces and sells a single product. Its selling price is Rs. 75 per unit, and variable cost is Rs. 50 per unit The fixed costs are Rs. 50 000. The Break-even Point (in units), and the Margin of Safety (Rs) at a sales level of 5 000 units respectively are

   (1) 2 000 units and Rs. 50 000 (2) 2 000 units and Rs. 225 000
   (3) 3 000 units and Rs. 75 000 (4) 3 000 units and Rs. 225 000
   (5) 5 000 units and Rs. 375 000 **(.....)**

2. Which of the following statements are correct in relation to the break-even pint of a manufacturing firm?

   A - There is neither a profit nor a loss
   B - Total contribution is equal to total fixed costs
   C - Sales revenue is equal to total costs
   D - Total fixed costs are equal to total variable costs

   (1) A B and C only (2) A B and D only (3) A B C and D only
   (4) A C D and E only (5) All A B C D and E **(.....)**

3. The following are the budgeted revenue and cost data related to a single product manufactured by a company. Sales Volume - 20 000 units: Selling price per unit - Rs. 20 : Contribution sales ratio - 40% Fixed costs - Rs. 100 000

Calculate:

(a) Break-even point (units): .....
(b) Profit at the budgeted sales volume: .....

☞ADVANCED LEVEL – 2013

Use the following information to answer questions No: 01 and 02

A company commenced producing a single product on 01.04.2013 and sells at Rs. 200 per unit. The costs incurred during the year ending 31.03.2013 are as follows:

	Rs.
Variable cost per Unit:	
Direct material	40
Direct labour	25
Manufacturing overheads	20
Selling and distribution overheads	15
Annual fixed cost:	
Manufacturing overheads	200 000
Selling and distribution overheads	350 000
Production	20 000 units

1. The prime cost per unit and total cost of production at 20 000 units respectively:
   (1) Rs. 65 and Rs. 1 500 000 (2) Rs. 65 and Rs. 1 900 000
   (3) Rs. 85 and Rs. 1 900 000 (4) Rs. 85 and Rs. 2 200 000
   (4) Rs. 100 and Rs. 2 200 000 **(.....)**
2. The contribution per unit and the profit at 20 000 units respectively:
   (1) Rs. 90 and Rs. 1 250 000 (2) Rs. 100 and Rs. 1 450 000
   (3) Rs. 115 and Rs. 1 750 000 (4) Rs. 125 and Rs. 1 950 000
   (4) Rs. 135 and Rs. 2 150 000 **(.....)**

3. Which of the following statements are correct when there is a decrease in the sales price and an increase in the fixed cost while other factors remain constant?
   A - No change in the breakeven point
   B - The breakeven point decreases
   C - The breakeven point increases
   D - The profit decreases
   E - The contribution decreases
   (1) A and B only (2) A B and E only (3) A B C and D only
   (4) C and D only (5) C D and E only

   (.....)

Use the following information to answer questions No: 04 and 05

A company manufactures a unique type of mobile phone and sells at a price of Rs. 25 000 per unit. The Company's budgeted sales for the next year is 400 units which is equal to 80% of its capacity. The budgeted costs at this level of operations are as follows:

Direct material - Rs. 4 000 000
Direct labour - Rs. 2 000 000 (paid based on the number of unit produced)
Total overheads - Fixed Rs. 750 000
Variable Rs. 1 000 000

4. Calculate the following:
   (a) Break even point (Units) : **.....**
   (b) Margin of safety (Rupees) **:** **.....**

5. If a 10% reduction in the selling rice results in an increase of unit sales to 90% of the capacity of the company, what is the increase or decrease in the profit?

   .....

☞ADVANCED LEVEL – 2014

The budgeted production overheads of a company for the same period at two activity levels are given below:

Activity level (Units)	Budgeted production overheads (Rs.)
30 000	225 000
40 000	275 000

Prime cost per unit is estimated Rs. 10

1. Total variable production overheads and total cost of production at an activity level of 40 000 units

Sr. No	Total variable production overheads (Rs.)	Total cost of Production (Rs.)
1	50 000	525 000
2	50 000	675 000
3	200 000	675 000
4	200 000	825 000
5	275 000	675 000

(.....)

2. When both the selling price per unit and the variable cost per unit decrease by 15% and fixed costs remain unchanged the effect on the contribution per unit and t he contribution - sales ratio:

	Contribution per unit	Contribution sales ratio
(1)	Decrease	No change
(2)	Decrease	Decrease
(3)	Decrease	Increase
(4)	No change	No change
(5)	No change	Decrease

(.....)

3. The cost data of a manufacturing company is given below:

Direct material	-	Rs.	15 per unit
Direct wages	-	Rs.	25 per unit
Variable overheads:			
Production	-	Rs.	10 per unit
Nonproduction	-	Rs.	15 per unit
Fixed overheads:			
Production	-	Rs.	50 000
Nonproduction	-	Rs.	30 000

Calculate the following for a target production of 1 000 units:

(a)	Total production overheads	Rs	.....
(b)	Total overheads	Rs	.....
(c)	Total variable cost	Rs	.....

4. The following information relates to Product 'X' manufactured by a company

Variable cost per unit	Rs.	90
Fixed cost	Rs.	60 000
Contribution sales ratio		40%

Calculate the following:

(a) Break even point : Rs. **.....**

(b) Expected profit at 1 200 unit level : Rs. **.....**

☞ADVANCED LEVEL – 2015

1. The following information relates to a product manufactured by a company.

	Rs.
Sales	1 200
Variable costs	(600)
Contribution	600
Fixed Cost	(240)
Profit	360

The break-even point and the margin of safety at the current activity level in rupees:

	Break-even point (Rs '000.)	**Margin of Safety (Rs. '000)**
(1)	120	1 080
(2)	180	1 020
(3)	480	720
(4)	600	600
(5)	800	400

(.....)

2. When the production quantity of an item decreases, its unit variable cost:
   (1) Remains constant
   (2) Increases by a fixed amount
   (3) Decreases by a fixed amount
   (4) Increases proportionately with the production
   (5) Decreases proportionately with the production

(.....)

3. The following information is relevant for a company that manufactures single product

Variable Cost per unit	**Amount**	**Fixed Costs**	**Amount**
Selling and Administration	Rs.20	Selling and Administration	Rs.120 000
Production	Rs.40	Production	Rs.150 000

The company produced and sold 5 000 units and earned a profit Rs. 180 000 at this level of activity. Calculate the following:

a) Contribution per unit **Rs.....**
(b) Selling price per unit **Rs. .....**

☞ADVANCED LEVEL – 2016

1. Which of the following statements is correct relating to classification of costs?
   (1) The production cost consists only of direct costs
   (2) All direct costs are variable costs
   (3) The depreciation of machinery is considered as a controllable cost
   (4) The costs are classified mainly as variable and fixed, based on the behavior
   (5) The costs are classified as relevant and irrelevant for the measurement of inventory

(.....)

2. Which of the following statements are true in relation to cost volume profit (CVP) analysis?
   A - A contribution earned beyond the breakeven point (BEP) generates a profit
   B - At BEP the total contribution is equal to the total fixed cost
   C - Beyond BEP the total contribution is equal to the sum of total fixed cost and profit
   D - Below the BEP fixed cost is higher than total contribution
   (1) A and B only (2) B and C only (3) A C and D only
   (4) B C and D only (5) All A B C and D

(.....)

3. A company produces a single product. The cost of production of this product is Rs. 200 per unit of which 75% is variable. The company is currently producing 14 000 units and its contribution to sale ratio is 50%. The company has to bear an additional fixed production overheads of Rs. 260 000 when the current activity level increases to 16 000 units. The break-even point (in rupees) at current activity level and the production cost per unit at an activity level of 16,000 units.

	Break-even point (Rs. '000)	**Cost of production per unit (Rs.)**
1	1 400	200.00
2	1 400	210.00
3	1 400	216.25
4	4 200	140.00
5	4 200	210.00

(.....)

4. The following costs have been incurred by a shirt manufacturing company. Classify these cost items as Variable (V) or fixed (F) and indicate whether they will be included in the Product Cost.

	Cost	**V/F**	**Product cost (Yes/No)**
A	Wages of workers based on number of shirts manufactured	.....	.....
B	Costs of buttons attached to the shirts	.....	.....
C	Insurance premium for the factory	.....	.....
D	Salaries of production supervisors	.....	.....

5. A company produces and sells a single product. The following data relates to its production level of 10 000units.

Selling price per unit - Rs. 90
Variable cost per unit - Rs. 60
Fixed cost per - Rs. 180 00

Due to changes in market conditions, the unit selling price and variable cost are expected to increase by 30% and 20% respectively, while other factors remain constant.Calculate the following:

	Situation	**Break-even-point (units)**	**Margin of safety (Units)**
A	Before change in market conditions	.....	.....
B	After change in market conditions	.....	.....

☞ADVANCED LEVEL – 2017

1. The annual budgeted information of a firm, which produces a single product, is given below. The budgeted Activity level of this firm for the next financial year is 10 000 units

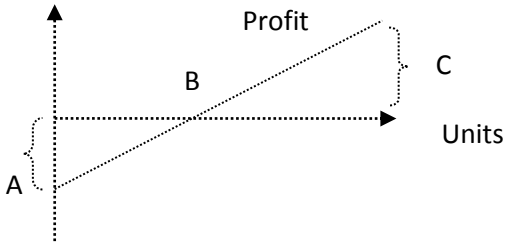
Selling price per unit	Rs. 100
Prime cost per unit (all variable costs)	Rs. 20
Variable production overhead costs per unit	Rs. 15
Sales agents commission	5% of the selling price
Fixed production overheads per unit	Rs. 12
Fixed non-production overheads per unit	Rs. 18

Calculate the following:

(a) At the activity level of 10 000 units
  (1) Production cost per unit Rs. .....
  (2) Total cost per unit Rs. .....
  (3) Variable cost per unit Rs. .....

(b) Fixed cost per unit at an activity level of 6 000 units Rs.

2. The profit volume graph of a company is given below:
   Identify the items given by A B and C in this graph



A	.....
B	.....
C	.....

☞ADVANCED LEVEL – 2018

Use the following information to answer questions No: 01 and 02

A company manufactures a single product and sells at Rs. 50 per unit. The following information relates to two activity levels:

Number of Units produced	**Cost per unit (Rs.)**
2 000	50
3 000	40

1. Total fixed cost and the unit variable cost respectively:
   (1) Rs. 20 000 and Rs. 10 (2) Rs. 20 000 and Rs. 20
   (3) Rs. 40 000 and Rs. 30 (4) Rs. 60 000 and Rs.10
   (5) Rs. 60 000 and Rs. 20

(.....)

2. Break-even point (in units) and contribution to sales ratio respectively:
   (1) 500 and 0.4 (2) 667 and 0.4 (3) 1 000 and 08
   (4) 1 500 and 0.6 (5) 2 000 and 0.6

(.....)

3. A company produces single product and sells at Rs. 60 per unit. If the company sells 16 000 units, the loss per unit is Rs. 10 and if it sells 40 000 units, the profit per unit is Rs. 8

   Indicate the following:

   (a) Total fixed cost : Rs. **.....**
   (b) Contribution per unit : Rs. **.....**
   (c) Breakeven point : Units **.....**

☞ADVANCED LEVEL – 2019

01.Which of the following statements are correct at the breakeven point?

   A - Total contribution is equal to the total fixed cost
   B - Total sales ncome is equal to total fixed cost
   C - Sum of the total fixed cost and total variable cost is equal to the total sales income
   D - Fixed cost per unit is equal to the variable cost per unit

   (1) A and B only (2) A and C only (3) A B and D only
   (4) B C and D only (5) All A B C and D

(.....)

02.The following information related to a 3 hours seminar organized for a competitive examination

Description	**Rs.**
Hall charges (per hour)	10 000
Lecture fees (per hour)	15 000
Advertising expenses	25 000
Lecture material expenses per participant	500
Seminar fee per participant	1 500

Compute the followings:

(a) Contribution per participant : **Rs** .....

(b) Fixed cost of the seminar : **Rs** .....

(c) Number of participants to cover the total cost : .....

Special Notes