MARGINAL COSTING

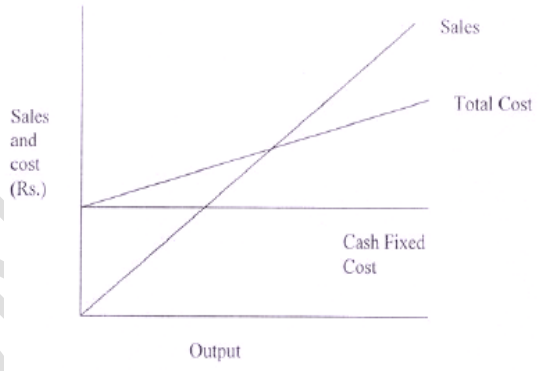
Q 1. Discuss briefly the relevant costs with examples.
(PCC Nov 07 – 2 marks)

Ans. Relevant costs are those expected future cost which are essential but differ for alternative course or action.
(a) Historical cost or sunk costs are irrelevant as they do not play any role in the decision making process.
(b) Variable costs which will not differ under various alternatives are irrelevant.

Q 2. Explain and illustrate cash break-even chart.
(PCC May 08 – 3 marks)

Ans. In cash break-even chart, only cash fixed costs are considered. Non-cash items like depreciation etc. are excluded from the fixed cost for computation of break-even point. It depicts the level of output or sales at which the sales revenue will equal to total cash outflow. It is computed as under:

$$\text{Cash BEP (Units)} = \frac{\text{Cash Fixed Cost}}{\text{Cost per Units}}$$



Hence for example suppose insurance has been paid on 1st January, 2006 till 31st December, 2010 then this fixed cost will not be considered as a cash fixed cost for the period 1st January, 2008 to 31st December, 2009.

Q 3. What is a marginal cost?

A. Marginal cost is the amount at any given volume of output by which aggregate variable costs are changed if the volume of output is increased by one unit. In practice this is measured by the total variable cost attributable to one unit. Marginal cost can precisely be the sum of prime cost and variable overhead.

In this context a unit may be a single article, a batch of articles, an order, a stage of production capacity, a process or a department. It relates to the change in output in particular circumstances under consideration.

Q 4. What is contribution? How is it related to profit?

Ans. Contribution or the contributory margin is the difference between sales value and the marginal cost. It is obtained by subtracting marginal cost from sales
revenue of a given activity. It can also be defined as excess of sales revenue over the variable cost. The difference between sales revenue and marginal/variable cost is considered to be the contribution towards fixed expenses and profit of the entire business.
Contribution = Fixed Cost + Profit OR
Profit = Contribution – Fixed Cost

Q 5. What is a limiting or key factor? Give examples.

A. Key factor or Limiting factor is a factor which at a particular time or over a period limits the activities of an undertaking. It may be the level of demand for the products or services or it may be the shortage of one or more of the productive resources,
e.g., labour hours, available plant capacity, raw material's availability etc.

Q 6. Why is it important to classify costs as fixed and variable?

Ans. Segregation of all expenses into fixed and variable elements is the essence of marginal costing. The primary objective of the classification of expenses into fixed and variable elements is to find out the marginal cost for various types of managerial decisions. The other uses of it are as below:

(i) Control of expenses : The classification of expenses helps in controlling expenses. Fixed expenses are said to be sunk costs as these are incurred irrespective of the level of production activity and they are regarded as uncontrollable expenses. Since variable expenses vary with the production they are said to be controllable.

(ii) Preparation of budget estimates: This distinction between fixed and variable cost also helps the management to estimate precisely the budgeted expenses.

Q 7. What is a marginal cost equation?

Ans. The contribution theory explains the relationship between the variable cost and selling price. It tells us that selling price minus variable cost of the units sold is the contribution towards fixed expenses and profit. If the contribution is equal to fixed expenses, there will be no profit or loss and if it is less than fixed expenses, loss is incurred. Since the variable cost varies in direct proportion to output, therefore if the firm does not produce any unit, the loss will be there to the extent of fixed expenses. These points can be described with the help of following marginal cost equation:

$(S \times U) – (V \times U) = F + P$

Where,
S = Selling price per unit
V = Variable cost per unit
U = Units
F = Fixed expenses
P = Profi

Q 8. Differentiate between absorption costing and marginal costing.
Ans.

	Marginal costing	Absorption costing
1.	Only variable costs are considered for product costing and inventory valuation.	Both fixed and variable costs are considered for product costing and inventory valuation.
2.	Fixed costs are regarded as period costs. The Profitability of different products is judged by their P/V ratio.	Fixed costs are charged to the cost of production. Each product bears a reasonable share of fixed cost and thus the profitability of a product is influenced by the apportionment of fixed costs.
3.	Cost data presented highlight the total contribution of each product.	Cost data are presented in conventional pattern. Net profit of each product is determined after subtracting fixed cost along with their variable costs.
4.	The difference in the magnitude of opening stock and closing stock does not affect the unit cost of production.	The difference in the magnitude of opening stock and closing stock affects the unit cost of production due to the impact of related fixed cost.

Q 9. What are the advantages and disadvantages of marginal costing?

Ans: **Advantages of Marginal Costing:**

1. The marginal cost remains constant per unit of output whereas the fixed cost remains constant in total. Since marginal cost per unit is constant from period to period within a short span of time, firm decisions on pricing policy can be taken.
2. If fixed overheads are included on the basis of pre-determined rates, there will be either under-recovery or over-recovery of overheads. Marginal costing avoids such under or over recovery of overheads.
3. The stock of finished goods and work-in-progress are carried on marginal cost basis and the fixed expenses are written off to profit and loss account as period cost. This shows the true profit of the period.
4. Marginal costing helps in the preparation of break-even analysis which shows the effect of increasing or decreasing production activity on the profitability of the company.

5. Segregation of expenses as fixed and variable helps the management to exercise control over expenditure.
6. Marginal costing helps the management in taking a number of business decisions like make or buy, discontinuance of a particular product, replacement of machines, etc.

Limitations of Marginal Costing:

1. It is difficult to classify exactly the expenses into fixed and variable category. Some expenses are neither totally variable nor wholly fixed.
2. Contribution of a product itself is not a guide for optimum profitability unless it is linked with the key factor.
3. Sales staff may mistake marginal cost for total cost and sell at a price; which will result in loss or low profits. Hence, sales staff should be cautioned while giving marginal cost.
4. Overheads of fixed nature cannot altogether be excluded particularly in large contracts, while valuing the work-in- progress. In order to show the correct position fixed overheads have to be included in work-in-progress.
5. Some of the assumptions regarding the behaviour of various costs are not necessarily true in a realistic situation. For example, the assumption that fixed cost will remain static throughout is not correct. Fixed cost may change from one period to another. For example salaries bill may go up because of annual increments or due to change in pay rate etc. The variable costs do not remain constant per unit of output. There may be changes in the prices of raw materials, wage rates etc. after a certain level of output has been reached due to shortage of material, shortage of skilled labour, concessions of bulk purchases etc.
6. Marginal costing ignores time factor and investment. For example, the marginal cost of two jobs may be the same but the time taken for their completion and the cost of machines used may differ. The true cost of a job which takes longer time and uses costlier machine would be higher. This fact is not disclosed by marginal costing.

Q 10. Critically discuss the assumptions underlying CVP analysis.

Ans: Cost volume profit (CVP) analysis is the analysis of three variables cost, volume and profit. Such an analysis explores the relationship between costs, revenue, activity levels and the resulting profit. It aims at measuring variations in cost and volume.

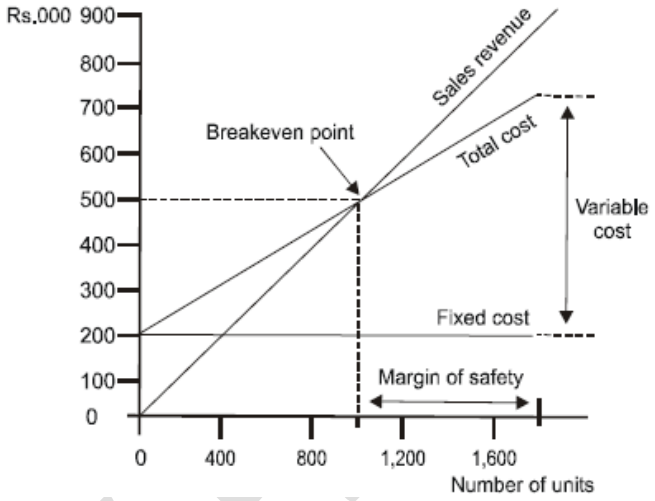
CVP analysis is based on the following assumptions:

1. Changes in the levels of revenues and costs arise only because of changes in the number of units produced and sold.
2. Total costs can be separated into two components; a fixed component that does not vary with output level and a variable component that changes with respect to output level.
3. When represented graphically, the behaviour of total revenues and total costs are linear in relation to output level within a relevant range and time period.
4. Selling price, variable cost per unit, and total fixed costs within a relevant range and time period are known and constant.

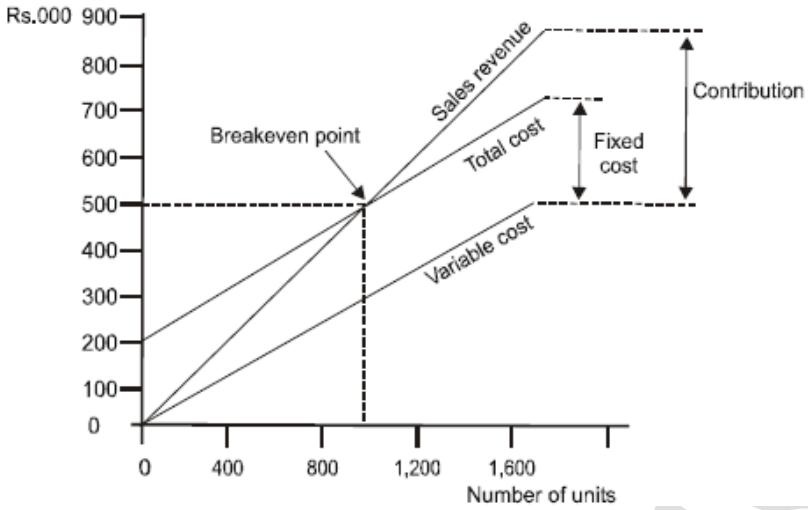
5. The analysis either covers a single product or assumes that the proportion of different products when multiple products are sold will remain constant as the level of total units sold changes.
6. All revenues and costs can be added, subtracted, and compared without taking into account the time value of money.

Q 11. Explain: (i) Breakeven Chart (ii) Contribution Breakeven Chart (iii) Profit-volume Chart

Ans **(i) Breakeven Chart:** A breakeven chart records costs and revenues on the vertical axis and the level of activity on the horizontal axis. The breakeven point is that point where the sales revenue line intersects the total cost line. Other measures like the margin of safety and profit can also be measured from the chart.

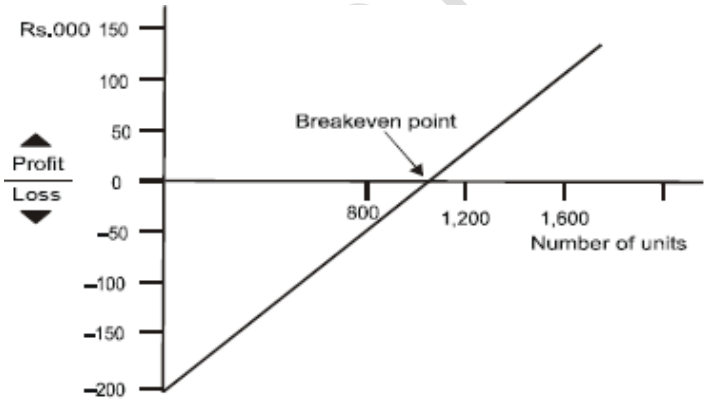


(ii) Contribution Breakeven Chart: It is not possible to use a breakeven chart to measure contribution. This is one of its major limitations especially so because contribution analysis is literally the backbone of marginal costing. To overcome such a limitation contribution breakeven chart is used, which is based on the same principles as a conventional breakeven chart except for that it shows the variable cost line instead of the fixed cost line. Lines for Total cost and Sales revenue remain the same. The breakeven point and profit can be read off in the same way as with a conventional chart. However it is also possible to read the contribution for any level of activity.



The contribution can be read as the difference between the sales revenue line and the variable cost line.

(iii) Profit-volume Chart: This is also very similar to a breakeven chart. In this chart the vertical axis represents profits and losses and the horizontal axis is drawn at zero profit or loss. In this chart each level of activity is taken into account and profits marked accordingly. The breakeven point is where this line interacts the horizontal axis.



The loss at a nil activity level is equal to Rs. 2,00,000, i.e. the amount of fixed costs. The second point used to draw the line could be the calculated breakeven point or the calculated profit for sales of a particular number of units.

Advantages of the profit-volume chart: The biggest advantage of the profit-volume chart is its capability of depicting clearly the effect on profit and breakeven point of any changes in the variables.

Q 12. Distinguish between Marginal Costing and Differential Costing.

Ans. Marginal Costing is defined as the 'Ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs'.

Differential Costing is defined as the technique of costing which uses differential costs and/or differential revenues for ascertaining the acceptability of an alternative. The technique may be termed as incremental

costing when the difference is increase in costs and decremental costing when the difference is decrease in costs.

The main points of distinction between marginal costing and differential costing are as below:

(a) The technique of marginal costing requires a clear distinction between variable costs and fixed costs whereas no such distinction is made in the case of differential costing.
(b) In marginal costing, margin of contribution and contribution ratio are the main yard sticks for performance evaluation and for decision making whereas under differential costs analysis, differential costs are compared with the incremental or decremental revenue (as the case may be) for arriving at a decision.
(c) Differential cost analysis is possible in both absorption costing and marginal costing, where as marginal costing in itself is a distinct technique.
(d) Marginal cost may be incorporated in the cost accounting system whereas differential costs are worked out separately.

PRACTICAL PROBLEMS

Q- 1) Find the contribution and profit earned. Selling price per unit ₹ 25. Variable cost per unit ₹ 20. Fixed Cost ₹ 3,05,000. Output 80,000 units.

Q-2) Calculate the profit earned. Fixed cost ₹ 5,00,000. Variable cost ₹ 10 per unit. Selling price ₹ 15 per unit. Output 150,000 units

Q-3) Calculate the variable cost : Sales ₹ 1,50,000. Profit ₹ 40,000. Fixed cost ₹ 30,000. Find the amount of variable cost.

Q-4) Calculate P / V Ratio : Marginal cost ₹ 24,000. Sales ₹ 60,000

Q-5) The sales turn over and profit during two periods are as under:

	Period 1	**Period 2**
Sales	₹ 20,000	₹ 30,000
Profit	₹ 2,000	₹ 4,000

Calculate the P.V. Ratio

Q-6) Calculate : P.V. Ratio

	Total Sales	**Total Costs**
Year ending 31 st December 2006	22,23,000	19,83,600
Year ending 31 st December 2007	24,51,000	21,43,200

Q-7) Calculate the selling price if marginal cost is ₹ 2,400 and P.V. Ratio is 20 %.

Q-8) Find, Contribution and P.V. Ratio. Variable cost per unit ₹ 40. Selling price per unit ₹ 80. Fixed expenses ₹ 2,00,000. Output 10,000 units.

Q-9) Calculate Breakeven point. Fixed costs ₹80,000. Variable cost per unit ₹ 4. Sales ₹ 2,00,000. The number of units involved coincides with expected volume of output. Each unit sells at Rs.20.

Q-10) Calculate the Break even point : Sales ₹2,00,000. Fixed expenses ₹ 50,000. Variable expenses ₹ 1,00,000.

Q-11) Calculate P.V. Ratio and Break Even Point : Sales ₹ 5,00,000. Fixed Costs ₹1,00,000. Profit ₹ 1,50,000.

Q-12) Find BEP. Variable cost per unit ₹ 12. Selling price per unit ₹ 20. Fixed expenses ₹ 60,000. What will be the selling price per unit if the BEP is brought down to 6000 units?

Q-13) Calculate P.V. Ratio (2) Profit when sales are ₹ 20,000 (3) New BEP if selling price is reduced by 20 %. Given Fixed expenses ₹ 4,000 and Break even point ₹ 10,000.

Q-14) Given fixed cost is ₹ 8,000. Profit earned ₹ 2,000 and BEP sales ₹ 40,000. Find the actual sales.

Q-15) in lakhs

Particulars	**1998**	**1999**
Sales	150	200
Profit	30	50

(I) Calculate the P.V. Ratio & Total Fixed Expenses
(II) Break Even Sales (In amount)
(III) Sales required to earn a profit of ₹ 90 lakhs
(IV) Profit or Loss that would arise if the sales were ₹ 280 lakhs.

Q-16) The following data is given:

Fixed expenses ₹ 10,000, Variable expenses ₹ 10 per unit, Selling price ₹ 15 per unit indicate the number of units to be manufactured and sold (i) Break Even (ii) to earn a profit of ₹ 10,000.

While additional units would be necessary to increase the above profit by ₹ 5,000?

Q-17) The following figures are extracted from the books of manufacturing concern for the year 1990-91

Direct Material	2,05,000	Variable overheads	1,00,000
Direct Labour	75,000	Sales	5,00,000
Fixed Overheads	60,000		

Calculate the breakeven point (B.E.P.). What will be the effect of BEP of an increase of 10% in (I) Fixed Expenses and (ii) variable Expenses.

Q-18) A Company budgets for a production of 150000 units. The variable cost per unit is ₹ 14 and fixed cost per unit is ₹ 2 per unit. The company fixes the selling price to fetch a profit of 15% on cost.

Required,

A. What is the break- even point?

B] What is the profit/volume ratio?

C] If the selling price is reduced by 5%, how does the revised selling price affects the Break Even Point and the Profit/Volume Ratio?

D] If profit increase of 10% is desired more than the budget, what should be the sales at the reduced price?

Q-19) From the following figures, find the Break Even Volume

Selling price per ton	₹ 69.50
Variable cost per ton	₹ 35.50
Fixed Cost	₹ 18.02 lakhs

If this volume represents 40% capacity, what is the additional profit for an added production of 40% capacity, the selling price of which is 10% lower for 20% production and 15% lower than the existing price, for the other 20% capacity?

Q-20) A retail dealer in garments is currently selling 24, 000 shirts annually. He supplies the following details for the year ended 31st March 2007.

Selling price per shirt:	₹ 800
Variable cost per shirt:	₹ 600
Fixed Cost:	
Staff salaries:	₹ 24, 00, 000
General Office Cost:	₹ 8, 00, 000
Advertising Cost:	₹ 8, 00, 000

As a Cost Accountant, you are required to answer the following each part independently:

1. Calculate Break Even Point and margin of safety in sales revenue and number of shirts sold.
2. Assume that 30, 000 shirts were sold during the year, find out the net profit of the firm.
3. Assuming that in the coming year, an additional staff salary of Rs.10, 00, 000 is anticipated, and price of shirt is likely to be increased by 15%, what should be the break even point in number of shirts and sales?

Q-21) ABC Ltd. maintains a margin of safety of 37.5% with an overall contribution to sales ratio of 40%. Its fixed costs amount to Rs.5, 00,000. Calculate the following:

1. Break Even Sales
2. Total Sales
3. Total Variable Sales
4. Current Profi ts
5. New 'Margin of Safety' if the sales volume is increased by 7.5%

Q-22) A Company has two Plants at Locations I and II, operating at 100% and 75% of their capacities respectively. The company is considering a proposal to merge the two plants at one location to optimize available capacity. The following details are available in respect of the two plants, regarding their present performance/operation.

Particulars	**Location I**	**Location II**
Sales [Rs.in lakhs]	200	75
Variable Costs [Rs. in lakhs]	140	54

Fixed Cost [Rs. in lakhs]	30	14

For decision-making purposes, you are required to work out the following information,
I. The capacity at which the merged plan will break even.
II. The profit of the merged plant working at 80% capacity
III. Sales required if the merged plant is required to earn an overall profit of ₹ 22, 00,000

Q-23) A company sells its products at ₹15 per unit. In a period, if it produces and sells 8000 units, it incurs a loss of ₹ 5 per unit. If the volume is raised to 20 000 units, it earns a profit of ₹4 per unit. Calculate Break Even Point both in terms of rupees as well as units.

Q-24) A company wants to buy a new machine to replace one, which is having frequent breakdown. It received offers for two models, M1 and M2. Further details regarding these two models are given below

Particulars	**M1**	**M2**
Installed Capacity [Units]	10, 000	10, 000
Fixed overheads per annum	₹ 2, 40,000	₹ 1, 00,000
Estimated profit at the above capacity	₹ 1, 60,000	₹ 1, 00,000

The product manufactured using this type of machine, M1 or M2, is sold at Rs.100 per unit. You are Required to determine,
1. Break Even level of sales for each model.
2. The level of sales at which both the models will earn the same profit.
3. The model suitable for different levels of demand for the product.

Q-25) From the following information relating to Quick Standards Ltd. You are required to find out (i) Contribution, (ii) B.E.P. in units, (iii) Margin of safety, (iv) profit.

Total fixed costs	₹ 4,500
Total variable costs	₹ 7,500
Total sales	₹ 15,000
Sales (units)	₹ 5,000

Also calculate the volume of sales to earn profit of ₹ 6,000.
The ratio of variable cost of sales in 70%. The break-even point occurs at 60% of the capacity sales. Find out the capacity sales when fixed cost are ₹ 90,000. Also compute profit at 75% of the capacity sales.

Q-26) A factory engaged in manufacturing plastic buckets is working to 40% capacity and produces 10, 000 buckets per annum. The present cost break up for one bucket is as under,

Material	₹ 10
Labour	₹ 3
Overheads	₹ 5 [60% fixed]
The selling price is	₹ 20 per bucket.

If it is decided to work the factory at 50% capacity, the selling price falls by 3%. At 90% capacity, the selling price falls by 5% accompanied by a similar fall in the price of material.
You are required to calculate the profit at 50% and 90% capacities and also show break even points for the same capacity production.

Q-27) The Drona X-Pert Shoe company sells five different styles of ladies chappals with identical purchase cost and selling price. The company is trying to find out the profitability of opening another store, which will have the following expenses and revenues.

	Per Pair(₹)
Selling price	60.00
Variable cost	39
Salesmen's Commission	3
Total variable cost	42
Annual fixed expenses are:	
Rent	1,20,000
Salaries	4,00,000
Advertisement	80,000
Other fixed expenses	20,000
	6,20,000

Required:

(a) Calculate the Annual break-even point in units and in value. Also determine the profit or loss if 70,000 pairs of chappals are sold.

(b) The sales commissions are proposed to be discontinued, but instead a fixed amount of ₹ 90,000 is to be incurred in fixed salaries. A reduction in selling price of 5% is also proposed. What will be the break-even point in units?

(c) It is proposed to pay the store manager ₹ 1 per pair as a further commission. The selling price is also proposed to increase by 5%. What would be the break-even point in units?

Q-28) A retail dealer in garments is currently selling 24,000 shirts annually. He supplies the followings details for the year ended 31st December,2011.

	₹
Selling price per unit	40
Variable cost per unit	25
Fixed cost: Staff salaries for the year	1,20,000
General office costs for the year	80,000
Advertisement costs for the year	40,000

Required:

(a) Calculate the break-even point and margin of safety in sales revenue and number of shirts sold.

(b) Assume that 20,000 shirts were sold in a year. Find out the net profit of the firm.

(c) If it is a decided to introduced selling commission of ₹ 3 per shirt. How many shirt would require to be sold in a year to earn a net profit of ₹ 15,000.

Find out the overall break-even point and overall P/V Ratio for the followings three products:

Q-29)

Product	**X**	**Y**	**Z**
Sales Value Mix Ratio	20%	30%	50%
Variable Cost to Sales Ratio	50%	30%	20%

Total Fixed Cost ₹ 35,500.

Q-30) A company manufactures a single product having a marginal cost ₹ 0.75 a unit. Fixed costs are ₹ 12,000. The market is such that up to 40,000 units can be sold at ₹ 1.50 a unit, but any additional sales must be made at ₹ 1.00 per unit. There is a planned profit of ₹ 22,000. How many units must be made and sold?

Q-31) In a purely competitive market 10,000 pocket transistors can be manufactured and sold and a certain profit is generated. It is estimated that 2,000 pocket transistors need be manufactured and sold in monopoly market to earn the same profit.
Profit under both of the conditions is targeted at ₹ 2,00,000. The variable cost per transistor is ₹ 100 and the total fixed cost is ₹ 37,000.
You are required to find out the unit selling price both under monopoly and competitive conditions.

Q-32) A T.V. manufacturing co. finds that while it cost ₹ 6.25 to make component R-208, the same is available in the market at ₹ 5.75 each, with an assurance of continued supply.
The cost element is:

	₹
Materials	2.75 each
Labour	1.75 each
Other variables	0.50 each
Depreciation and other fixed cost	1.25 each
Total	**6.25 each**

(a) Should you make or buy?
(b) What would be your decision, if the suppliers offer the component at ₹ 4.85 each?

Q-33) A single product company sells its products at ₹ 60 per unit. In 1996, the company operated at margin of safety of 40%. The fixed costs amounted to ₹ 3,60,000 and the variable cost ratio to sales was 80%.
In 1997, it is estimated that the variable cost will go up by 10% and the fixed costs will increase by 5%.
Find the selling price required to be fixed in 1997 to earn the same P/V ratio as in 1996.
Find out the number of units required to be produced and sold to earn the same profit as in 1996.

Q-34) Green Valley Hotal has annual fixed costs applicable to rooms of ₹ 15,00,000 for a 300 rooms hotel with average daily room rates of ₹ 400 and average variable costs of ₹ 60 for each room rented. The hotel operates 365 days per year. It is subject to an income tax rate of 30 percent. You are required to :
(i) Calculate the number of rooms the hotel must rent to earn a net income after taxes of ₹ 10,00,000 and
(ii) Compute the break-even point in terms of number of room rented.

Q-35) Vinak Ltd. Which produces three products furnishes you the following data for 2009-2010.

	PRODUCT		
	A	**B**	**C**
Selling Price Per Unit (₹)	100	75	50
Profit volume ratio (%)	10	20	40
Maximum sales potential (units)	40,000	25,000	10,000
Raw material content as a percentage of variable costs (%)	50	50	50

The fixed expenses are estimated at ₹ 6,80,000. The company uses a single raw material in all the three products. Raw material is in short supply and the company has a quota for the supply of raw materials of the value of ₹ 18,00,000 for the year 2009-10 for the manufacture of its products to meet its sales demand. You are required to find out:

(i) Set a product mix which will give a maximum overall profit keeping the short supply of raw materials in view.

(ii) Compute the maximum profit.

Q-36) From the following data, recommend the most profitable product mix, presuming that direct labour hour available are only 700:

	PRODUCT	
	A	**B**
Contribution per unit	₹ 30	₹ 20
Direct labour hours per unit	10hrs	5 hrs

The maximum production possible for each of the product A and B is 100 units. The fixed overheads are ₹ 2,000.

Q-37) The followings particulars are obtained from costing record of the factory:

Particular	**Product A (per unit) (₹)**	**Product B (per unit) (₹)**
Selling price	400	1000
Material (₹ 40 per kg)	80	320
Labour (₹ 20 per hour)	100	200
Variable overhead	40	80

Total fixed overheads - ₹30,000

Comment on the profitability of each product when:

(A) Raw material is in short supply.
(B) Production capacity is limited.
(C) Sales quantity is limited.
(D) Sales value is limited
(E) Only 1000 kg of raw materials is available for both the products in total and maximum sales quantity of each product is 300 units.

Q-38) The chief cost accountant of a company running an orchard with an adequate supply of labour, presents the following data and requests you to advise about the area to be allotted for the cultivation of various types of fruits,

which would result in maximization of profits. The company contemplates growing Apple, Lemons, Oranges and Peaches.

Particular	Apples	Lemons	Oranges	Peaches
Selling price per box	15	15	30	45
Season yield in boxes per acre	500	150	100	200
Costs:	₹	₹	₹	₹
Material per acre	270	105	90	150
Labour : Growing per acre	300	225	150	195
Picking and packing per box	1.50	1.50	3	4.5
Transport per box	3	3	1.50	4.5

The total fixed costs in each season would be ₹ 2,10,000. The following limitations are also place before you:

(A) The area available is 450 acres but out of this , 300 acres are suitable for growing only oranges and lemons. The balance of 150 acres is suitable for growing any of the four fruits.

(B) The marketing strategy of the company requires the compulsory production of all the four types of fruits in a season and the minimum quantity of any one type to be 18,000 boxes.

Calculate the total profit that would accrue if your advice is followed.

Q-39) Raman Ltd. Produces three products – X,Y and Z, from the same manufacturing facilities. The cost and other details of the three products are as under:

Particular	X	Y	X	Total
Selling price per unit (₹)	200	160	100	
Variable cost per unit (₹)	120	120	40	
Fixed overheads per month (₹)				2,76,000
Maximum production per month(units)	5,000	8,000	6,000	
Total hrs available for the month				200 hours
Maximum demand per month(units)	2,000	4,000	2,400	

The processing hours cannot be increased beyond 200 hours per month.

You are required to :

(A) Compute the most profitable of product mix

(B) Compute the overall break-even sales of the company for the month based on the mix calculated in (a) above.

Q-40) A company manufactures three products. The cost data are as under:

Particular	A	B	C
Direct materials (₹)	64	152	117
Direct labour: (in hours)	Hrs	Hrs.	Hrs.
Deptt 1 (₹ 5 Per hour)	18	10	20
Deptt 2 (₹ 6 Per hour)	5	4	7
Deptt 3 (₹ 4 per hour)	10	5	20
Variable overheads(`)	₹ 16	₹ 9	₹ 21

Fixed overheads ` 4,00,000 per annum.

The budged was prepared at a time, when the market was sluggish. The budgeted quantity and selling prices are as under:

Product	Budgeted quantity	Selling price (₹) per unit
A	9,750	270
B	7,800	280
C	7,800	400

Later the market improved and the sales quantities could be increased by 20% for product A and 25% each products B and C. the sales manager confirmed that the increased quantities could be achieved at the price originally budgeted. The production manager stated that the output cannot be increased beyond the budgeted level due to limitation of direct labour hours in deptt 2.

Required:

(i) Present a statement of budgeted profitability.
(ii) Set optimal product mix and calculate the optimal profit.

Q-41) ABC Ltd. Can produces 4,00,000 units of a product per annum at 100% capacity. The variables production costs are ₹ 40 per unit and the variable selling expenses are ₹ 12 per unit sold. The budgeted fixed production expenses were v 24,00,000 per annum and the fixed selling expenses were ₹ 16,00,000. During the year ended 31st march,2008, the company worked at 80% of its capacity. The operating data for the year are as follows:

Production	3,20,000 units
Sales @ v 30 per unit	3,10,000 units
Opening stock of finished goods	40,000 units\

Fixed production expenses are absorbed on the basis of capacity and fixed selling expenses are recovered on the basis of period.

You are required to prepare statement of cost and profit for the year ending 31st march,2008:

(i) On the basis of marginal costing.
(ii) On the basis of absorption costing.