

MARGINAL COSTING & C.V.P. ANALYSIS

1. Kalyan University conducts a special course on "Computer Application" for a month during summer. For this purpose, it invites applications from graduates. An entrance test is given to the candidates and based on the same, a final selection of a hundred candidates is made. The Entrance Test consists of four objective type examinations and is spread over four days, one examination per day. Each candidate is charged a fee of ₹ 500 for taking up the entrance test.

The following data was gathered for the past two years.

Statement of Net Revenue from the Entrance Test For the Course of "Computer Application"

	2003	2004
Gross Revenue (Fees Collected)	<u>₹ 10,00,000</u>	<u>₹ 15,00,000</u>
Costs: Valuation	4,00,000	6,00,000
Question Booklets	2,00,000	3,00,000
Hall Rent at ₹ 2,000 per day	80,000	80,000
Salary	60,000	60,000
Supervision Charges (one supervisor for every 100 candidates at the Rate of ₹ 500 per day)	40,000	60,000
General Administration Expenses	<u>60,000</u>	<u>60,000</u>
Total Cost	<u>8,40,000</u>	<u>11,60,000</u>
Net Revenue	<u>1,60,000</u>	<u>3,40,000</u>

You are required to compute:

- (a) The budgeted net revenue if 4,000 candidates take up the entrance test in 2005.
 - (b) The break-even number of candidates.
 - (c) The number of candidates to be enrolled if the net income desired is ₹ 20,000
2. Titan Engineering is operating at 70 per cent capacity and presents the following information :-

Break-even point	₹ 200 crores
P/V Ratio	40%
Margin of safety	₹ 50 crores

Management has decided to increase production to 95% capacity level with the following modifications. The selling price will be reduced by 8 per cent. The variable cost will be reduced by 5 per cent on sales.

The fixed cost will increase by ₹ 20 crores, including depreciation on additions, but excluding interest on additional capital. Additional capital of ₹ 50 crores will be needed for capital expenditure and working capital.

The management will be needed to earn ₹ 10 crores over and above the present profit and also meet 20 per cent interest on the additional capital.

What will be the revised : Break-even point, P/V Ratio, Margin of safety.

3. PH Ltd. has a productive capacity of 2,00,000 units of product of BXE per annum. The Company estimated its normal capacity utilisation at 90% for 2004-05. The variable costs are ₹

22 per unit and the fixed factory overheads were budgeted at ` 7,20,000 per annum. The variable selling overheads amounted to ` 6 per unit and the fixed expenses were budgeted at ` 5,04,000. The operating data for 2004-05 are as under :---

Production	1,60,000 units
Sales @ ` 40 per unit	1,50,000 units
Opening stock of finished goods	10,000 units

The cost analysis revealed an excess spending of variable factory overheads to the extent of ` 80,000. There are no variance in respect of other items of cost.

Required :

- (i) Determine the budgeted break even point for 2004-05
- (ii) What is the profitability for 2004-05 using :---
 - (a) marginal costing basis
 - (b) Absorption costing basis.
- (iii) Reconcile these two profits.

4. Gemini Publishers Ltd. is considering launching a new monthly magazine at a selling price of ` 10 per copy. Sales of the magazine are expected to be 5,00,000 a copy per month, but it is possible that the actual sales could differ quite significantly from this estimate.

The different methods of producing the magazine are being considered and neither would involve any additional capital expenditure. The estimated production cost for each of the two months of manufacture, together with the additional marketing and distribution costs of selling the new magazine, are given below:

	Method A (Rs)	Method B (Rs)
Variable costs	5.50 per copy	5.00 per copy
Specific Fixed cost	8,00,000 per month	12,00,000 per month

The following estimates of semi- variable costs have been available:

2,50,000 copies	5,50,000 per month	4,75,000 per month
4,50,000 copies	6,50,000 per month	5,25,000 per month

It may be assumed that the fixed cost content of the semi – variable cost will remain constant throughout the range of activity shown.

The company currently sells a magazine covering related topics to those that will be included in the new publication, and consequently, it is anticipated that sales of this existing magazine will be adversely affected. It is estimated that for every ten copies sold of the new publication, sales of the existing magazines will be reduced by one copy.

Sales and cost data of the existing magazine are as shown below:

Sales	2,20,000 copies per month
Selling price	` 8.50 per copy
Variable costs	3.50 per copy
Specified Fixed costs	8,00,000 per month.

Required:

- (a) Calculate, for each production method the net increase in company profits which will result from the introduction of the new magazine, at each of the following levels of activity:
 - 4,00,000 copies per month

- 5,00,000 copies per month
 6,00,000 copies per month
- (b) Calculate for each production method, the amount by which sales volume of the new magazine could decline from the anticipated 5,00,000 copies per month before the co. makes no additional profit from the introduction of the new publication.

5. A public company responsible for the supply of domestic gas has been approached by several prospective customers in a rural area adjacent to a high-pressure main. As a condition of its license to operate as a utility, the company is obliged to respond positively to current needs provided the financial viability of the company is not put at risk. New customers are charged ` 250 each for connection to the system.

Once a meter is installed, a standing charge of `10 per quarter is billed. Charges for gas are levied at ` 400 per 1,000 metered units.

A postal survey of the area containing, according to the rating authority, 5,000 domestic units, elicited a 40% response rate. 95% of those who responded confirmed that they wished to become gas users and expressed their willingness to pay the connection charge.

Although it is recognized that a small percentage of those willing to pay for connection may not actually choose to use gas, it is expected that the average household will burn 50 metered units per month. There will be some seasonal differences.

The company's marginal cost of capital is 17% pa and supplies of bulk gas cost the company `0.065 per metered unit. Wastage of 15% has to be allowed for Determine what the maximum capital project cost can be to allow the company to provide the service required.

6. Bajaj Limited manufactures and sells a motor cycle called 'Pulsar' This is the only product it manufactures and sells. The following data relates to the company's activities for the quarters ended 30th September and 31st December 2008 ;

	Quarter ended	
	30/9/08	31/12/08
Production (number of units)	1,200	1,000
Sales m(number of units)	1,000	1,200
There was 200 units in opening stock on 1st July, 2008 valued at budgeted cost. The selling price of each unit is `12,000. Variable costs per units are ;		

Direct materials	1,500
Direct labour	1,300
Production expenses	200
	3,000

Budgeted production for the year is 4,800 units. Budgeted fixed production overheads for the year are `3,600,000 and are absorbed using a pre-determined percentage of the total variable cost. Other fixed overheads are ;

	Quarter ended	
	30/9/08	31/12/08
Selling overheads	24,00,000	22,00,000
Distribution overheads	20,50,000	21,00,000
Administration overheads	16,00,000	17,00,000

You are required ;

- (a) to prepare separate profit statements in columnar format to clearly show the results of each quarter ;
 (i) Under a marginal costing system ; and

- (ii) Under an absorption costing system.
- (b) to reconcile the profits given by each system, for the two quarters separately, and in total if expense variance = 0.