



4

Pricing Decisions

LEARNING OBJECTIVES :

After studying this unit you will be able to :

- Understand and differentiate between different methods of Pricing the product.
- Comment on the Pricing policy of the company
- Understand the theory of Pricing under different
- Appreciate the different strategies of pricing followed by the company and their objectives.
- Understand the meaning and applicability of Pareto Analysis.

4.1 INTRODUCTION

A pricing decision is one of the most crucial & difficult decision that a firm has to make. Such a decision affects the long term life of any profit oriented enterprise.

Accounting information is often an important input to pricing decisions. Most firms needs to make decision about setting or accepting selling prices for their products or services. In some firms selling prices are derived directly from cost information by estimating future products cost & adding a suitable profit margin. In others an established market price is accepted. Fundamentally, in pricing decision the management must first decide on its pricing goal and then set the base price for goods or services. After this the firm may design its pricing strategies.

In this chapter we are going to discuss pricing of a finished product, the various types of pricing strategies and application of Pareto analysis.

4.2 THEORY OF PRICE

The basic approach in most of the micro-economic theory (theory of the individual firm and its relation to other firms) defines the term optimum price as that price which yields the maximum profits (excess of total revenues over total costs). Thus the basic assumption of the pricing theory is that the firm's main objective is to maximise its profits. It also assumes that the firm takes into consideration the position of demand and cost functions and that the firm produces one product.



4.2 Advanced Management Accounting

If a firm sell unlimited number of units, the total revenue line will be a straight line arrived at by $TR = mx$.

where,

TR = Total revenue line

m = quantity of units sold

x = price per unit.

In most of the market situations, however, additional units can be sold by reducing the price. This means that although the total sales revenue will increase as more and more units are sold, the increase in total revenue will decline gradually as sales increases. Consider the following example:

A firm's pricing of a product is as under:

20 units @ Rs.4 per unit.

21 units @ Rs.3.90 per unit.

22 units @ Rs.3.80 per unit.

The sales figures can be summarised as under:

Quantity	Price	Sale revenue	Addition to total revenue
	Rs.	Rs.	Rs.
20	4.00	80.00	—
21	3.90	81.90	1.90
22	3.80	83.60	1.70

The reduction in the price of each additional unit reflects a gradual reduction in the steepness of the total revenue curve as shown in the diagram given on next page. The total cost curve will however, register an increase in the steepness because as the volume increases, the cost also increases because of the difficulty of expanding output with a given productive resources.

The slope of the total revenue and total cost curves due to the addition of one unit will be equal to the increase in total revenue. This is the point where there will be no profit increase due to increase of one unit of output. In the figure [Fig. No. (1)], the situation has been depicted at point Z, where the gap between the total cost line and total revenue is the maximum, thus Z is the point of optimum volume. Any attempt to increase the volume beyond this point will reduce the profit because the incremental cost will be more than the incremental revenue.

These relations are expressed in terms of marginal revenue and marginal cost. Marginal revenue, is the increase in total revenue that results from the sale of one additional unit. In the example given above, the marginal revenue of increasing one unit from 20 units to 21 units is



Rs.1.90. Marginal cost is the increase in total cost that result from the production of one additional unit.

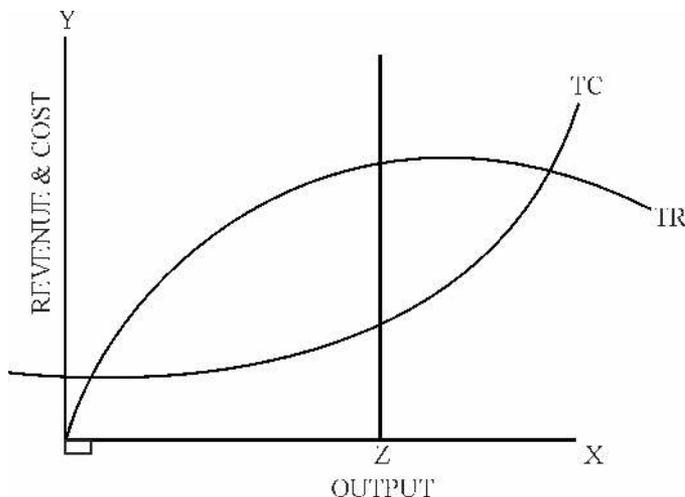


Figure 1

4.2.1 Pricing under different market structures : The determination of optimal price can be considered under the following market structures:

(a) Pure competition: Under pure competition a firm has no pricing policy of its own as it has to accept the prevalent market price and at this price, it can sell all of its production if it so desires. But at any higher price it can sell nothing. There is no control over market price which will equate the quantities available with the quantities which the buyers are willing to buy. The firm has to take a decision in favour of the quantity to sell. The firm can continue to produce so long as its marginal cost is less than or equal to its selling price, Upto the point at which the marginal cost is equal to price, increase in output will add to revenue and thereafter the increase will add to cost.

(b) Monopoly: It is a business situation which is characterised by:

- (i) one seller of a particular good or service
- (ii) competition from the producers of substitutes is almost insignificant.

4.3 PRICING POLICY

The pricing policy plays an important role in a business because the long run survival of a business depends upon the firm's ability to increase its sales and device the maximum profit from the existing and new capital investment. Although cost is an important aspect of pricing, consumer demand and competitive environment are frequently far more significant in pricing decisions. Thus costs alone do not determine prices. Cost is only one of the many complex factors which determine prices. There must however, be some margin in prices over total cost if capital is to be unimpaired and production maximised by the utilisation of internal surplus.



4.4 Advanced Management Accounting

The cost plus pricing method though common is not the best method because it ignores demand and fails to adequately reflect competition. The pricing policy and the relative price structure should:

- (a) provide an incentive to producer for adopting improved technology and maximising production;
- (b) encourage optimum utilisation of resources;
- (c) work towards better balance between demand and supply;
- (d) promote exports; and
- (e) avoid adverse effects on the rest of the economy.

Due to above characteristics, a monopolist can raise the price of its products without frightening away all his customers. How much he can raise from his customers, depends upon the elasticity of demand for his particular product.

Under monopolistic condition, consumers may buy more at a lower price than at higher price. The profit can be maximised by equating marginal revenue with marginal cost. This cost be seen from the following diagram.

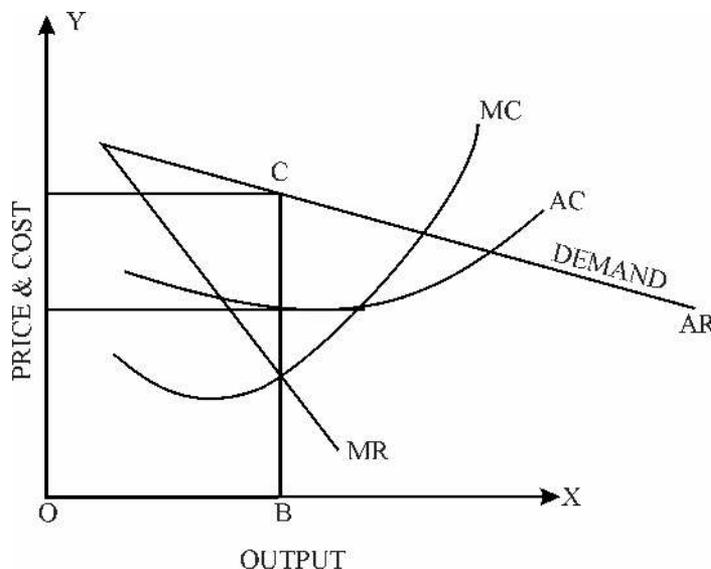


Figure 2

The point at which MR and MC curves meet will determine the price level. So the price will be BC and output to be manufactured will be OB. The firm may either fix output OB and leave the price to be fixed at BC or *vice versa*. There is, however, no protection for the existing firms from the entry of substitute firms (many sellers of similar but not necessary identical products) in the market.

(c) Monopolistic competition: We saw that substitute firms who sell similar products enter the market and because of differentiation of products by sellers, monopolistic competition



arises. Since there is limit to the growth of competitors the excess profits earned by monopolistic situation attracts new competition. This will have a long-run effect on the excess profits which will tend to diminish because of the price competition with close substitutes. The company will, however, have to compare marginal cost and marginal revenue in maximising its profits.

(d) Oligopoly: If in a market there are a few large sellers occupying a major share of the market, the situation is called oligopoly. If the oligopolistic seller finds that his competitors also increase their prices with his decision to increase or decrease their prices with his decision to reduce, his revenue curve will have the same shape as that of the market as a whole. If the competitors, however, do not follow suit, the shift in the sales will be sensitive. If one seller increases his price while the others do not, the consumers will start buying from the competitors and the sales of the seller who increased his price will start falling off. Thus each firm will study the potential reaction before increasing or decreasing the selling price.

4.4 PRINCIPLES OF PRODUCT PRICING

As already stated cost should not be considered as an important determinant of price. The tendency should be to lower the price in such a way so as to choose a right combination of price and output to maximise profits. The important determinants of price, therefore, are competitive situations prevailing in the market and elasticities.

Taking the standard products into consideration, the pricing principles are much the same whether the product is a new one or the one already well established in the market. However the environmental situation and information base are different.

Illustration

A small scale manufacturer produces an article at the operated capacity of 10,000 units while the normal capacity of his plant is 14,000 units. Working at a profit margin of 20% on sales realisation, he has formulated his budget as under:

Units	<u>10,000</u>	<u>14,000</u>
	Rs.	Rs.
Sales realisation	2,00,000	2,80,000
Variable overheads	50,000	70,000
Semi-variable overheads	20,000	22,000
Fixed overheads	40,000	40,000

He gets an order for a quantity equivalent to 20% of the operated capacity and even on this additional production profit margin is desired at the same percentage on sales realisation as for production to operated capacity.

Assuming prime cost is constant per unit of production, what should be the minimum price to realise this objective?



4.6 Advanced Management Accounting

Solution

Working Notes:

(i) Computation of prime cost:	Rs.	Rs.
The profit margin is 20% on sale		
Therefore, cost of sale, 80% of Rs. 2 lakhs		1,60,000
Variable overheads	50,000	
Semi-variable overheads	20,000	
Fixed overheads	<u>40,000</u>	<u>1,10,000</u>
Prime cost		<u>50,000</u>

- (ii) Since an additional production of 4,000 units requires an increase of Rs. 2,000 in semi-variable expenses, an additional production of 2,000 units will require an increase of Rs. 1,000 in semi-variable expense.

Computation of differential cost of production of 2,000 additional units for determining minimum price

Units	10,000	12,000	Differential cost for 2,000 units
	Rs.	Rs.	Rs.
Prime cost	50,000	60,000	10,000
Variable overheads	50,000	60,000	10,000
Semi-variable overheads	20,000	21,000	1,000
Fixed overheads	40,000	—	
	<u>1,60,000</u>	<u>1,81,000</u>	<u>21,000</u>

The differential cost for an excess production of 2,000 units over the operated capacity is Rs. 21,000 i.e. Rs. 10.50 per unit. Profit margin required 20% on sale i.e. 25% on cost.

Hence the minimum selling price = Rs. 10.50 + Rs. 2.625 = Rs. 13.125

4.5 NEW PRODUCT PRICING

The pricing of new product poses a bigger problem because of the uncertainty involved in the estimation of their demand. In order to overcome this difficulty experimental sales are conducted in different markets using different prices to see which price is suitable. A company may, for example, choose three different markets and by using the same amount of sales promotional activities, ascertain what is the right price. In such circumstances, it may even prove that the highest price yielding the largest unit contributory margin need not necessarily maximise the profits. A lower price may well go to maximise the profits.



Example

A company choose three prices to be charged in three different markets and it can be seen from the figures given below that the intermediate price maximises profits.

<i>Particulars</i>	<i>Price</i>	<i>Price</i>	<i>Price</i>
Selling price per unit	Rs. 1.20	Rs. 1.50	Rs. 1.80
Estimated sales (units)	8,000	6,000	3,000
	Rs.	Rs.	Rs.
Sales revenue : (A)	<u>9,600</u>	<u>9,000</u>	<u>5,400</u>
Costs:			
Manufacturing costs	5,200	3,900	1,950
Selling expenses	1,000	500	450
Fixed expenses	<u>1,500</u>	<u>1,500</u>	<u>1,200</u>
Total : (B)	<u>7,700</u>	<u>5,900</u>	<u>3,600</u>
Profit : {(A) – (B)}	<u>1,900</u>	<u>3,100</u>	<u>1,800</u>

4.6. PRICING OF FINISHED PRODUCT

4.6.1 Cost plus pricing : In many business the common method of price determining is to estimate the cost of product & fix a margin of profit.. The term ‘cost’ here means full cost at current output and wage levels since these are regarded as most relevant in price determination .In arriving at cost of production, it is necessary to determine the size of the unit whose products are to be costed and priced.

An individual manufacturer may take his cost of production into account and arrive at a price at which the products are to be sold in the concerned region. A manufacturer having several factories all over the country may determine the weighted average cost of each of the factories and include the same in his computations so as to arrive at a uniform price for the country as a whole, e.g., if prices are to be fixed by a statutory authority, like the Tariff Commissions; weighted average price is also taken into account if large number of factories are owned by one manufacturer.

The price may also be fixed after taking into account the cost of a representative unit which may fall within the range of lowest cost unit and the highest cost unit. Alternatively, the factories may be classified into (i) small size factories, (ii) medium size factories, and (iii) large size factories. The cost of medium size factories can be taken into account if this group forms the greater part of the industry. Where however, the units in an industry are very large as in the case of textile industry for example, some representative sample has to be taken. The sample should be of economic size and also be of representative of the conditions of the different regions.. The demand of the product and the cost of the marginal unit may have to be



4.8 Advanced Management Accounting

taken into account in fixing the price so that the marginal units are not driven out of the market.

In order to frame a price policy, one of the element that should receive consideration is the determination of normal capacity. Normal capacity is the utilisation of plant that is necessary to meet the average commercial demand over a period of time, long enough to level out peaks which come with seasonal and cyclical variations. The following chart illustrates the major relationships involved.

	Operation interruptions	
		Idle Capacity
Maximum Theoretical Capacity	Practical Plant Capacity	Capacity based on normal sales expectancy

Price determination should normally be based on the level of production and capacity utilisation likely to be achieved. Any assumption of low utilisation may result in over estimating the cost. Conversely, a high utilisation assumption may result in under estimating the cost. It is, therefore, desirable that the level of production and capacity utilisation which are likely to apply, say in the next three years should be arrived at with utmost care on realistic basis keeping in view not only the past performance but also the future demand. A uniform system of costing should also be devised and introduced in each industry for the fixation of price.

If a firm wants to survive and stay in business, it has to maintain its fixed capital intact so that its fixed assets may be replaced at the end of their useful working life out of the funds generated from profits retained in the business. In a period of relatively stable price levels, depreciation based on historical cost of fixed assets would perhaps be adequate for achieving this object. In periods when the price level is continuously changing, the firm may not be left with adequate funds generated out of accumulated depreciation at the end of the life of the plant to replace the plant at a higher price. Hence depreciation should be properly included as a part of cost so as to leave sufficient profits for aseeet replacement.

Advantages :

1. **Fair method:** It is a fair method of price fixation. The business executives are convinced that the price fixed will cover the cost.
2. **Assured Profit:** If price is greater than cost, the risk is covered. This is true when normal expected capacity basis of cost estimation is used.
3. **Reduced risks and uncertainties:** A decision maker has to take decisions in the face of many uncertainties. He may accept a pricing formula that seems reasonable for reducing uncertainty.
4. **Considers market factors:** This sort of pricing does not mean that market forces are ignored. The mark up added to the cost to make a price reflect the well established customs of trade, which guide the price fixer towards a competitive price.



Disadvantages :

1. **Ignores demand:** It ignores demand. It fails to take into account the buyers' needs and willingness to pay which govern the sales volume obtainable at each series of prices.
2. **Ignores competition:** It fails to reflect competition adequately.
3. **Arbitrary cost allocation:** It takes for granted that the costs have been estimated with exact accuracy which is not often true particularly in multi-product firms because the common costs are allocated arbitrarily.
4. **Ignores opportunity cost:** For many decisions incremental costs rather than full costs play a vital role in pricing. This aspect is ignored.
5. **Price-Volume relationships:** Since the fixed overheads are apportioned on the basis of volume of production, the cost will be more if a sales volume is less and cost will be less if sales volume is more. The increase or decrease in sales volume again is dependent of price. Thus it is a vicious circle—cost plus mark up is price based on sales volume and sales volume is based on price.

Illustration

Prompt Printers Ltd., uses a scheme of pricing based on cost plus. All the overheads are charged, based on direct labour and based on the total cost arrived at, the selling price is fixed.

The following figures are obtained from the Annual Budget for 1998 prepared by the company:

	Rs.
Sales	10,00,000
Direct material	1,80,000
Direct labour	3,20,000
Factory superintendent's salary	30,000
Commission paid on sales (5%)	50,000
Foreman's salaries	60,000
Insurance	10,000
Advertisement	20,000
Depreciation on assets	30,000
Administration expenses	90,000
Variable factory costs :	
Repairs and maintenance	60,000
Tools consumed	40,000
Miscellaneous supplies	10,000



4.10 Advanced Management Accounting

The company has submitted a tender quoting Rs. 10,000 on a large order with a cost of Rs. 1,800 Direct materials and Rs. 3,200 Direct labour. The customer strikes the business at Rs. 8,900 on a 'take it or leave it' basis. If the company accepts the order, the total sales for 1998 would be Rs. 10,08,900. The company is reluctant to accept the order as it would be against its policy of accepting an order below cost.

Write a note to the Managing Director, recommending the acceptance of the order, substantiating your recommendation fully with supporting figures to explain that the price offered would not be below cost and a sizeable profit also would be made. Also comment on the pricing policy of the company.

Solution

To : Managing Director

From : Management Accountant

Date :

Subject : Additional order

The additional order for which the company has submitted a tender quoting Rs. 10,000/and for which the customer has offered to strike the business at Rs. 8,900/- on a 'take it or leave it' basis and as the company is reluctant to accept the order as it would be against its policy of accepting an order below cost, the following is submitted for consideration of the Managing Director with the recommendation that the acceptance of the order will be profitable to the company as is substantiated by the following figures:

At present the company determines the sales value as follows :

	Rs.	Rs.
Direct material		1,80,000
Direct labour		3,20,000
Variable overheads (Repairs and Maintenance, Tools consumed Misc. supplies and sales commission)	1,60,000	
Fixed overhead (all other expenses)	2,40,000	4,00,000
Total cost		<u>9,00,000</u>
Profit		1,00,000
Sales		10,00,000

While applying overhead rate, the company does not distinguish between variable and fixed overheads. Overhead, as can be seen, is charged at 125% of direct labour and profit at 1/9 of total cost. On the same basis, the quotation price has been submitted as follows:

	Rs.
Direct material	1,800
Direct labour	<u>3,200</u>



Overhead (125% of direct labour)	4,000
Total cost	9,000
Profit 1/9 of total cost	<u>1,000</u>
Tender price	10,000

But this is an additional activity as the total sales after the acceptance of the order would be Rs. 10,08,900. To meet this order, only the variable overheads will be incurred as fixed overheads are absorbed by normal production. Therefore, the revised figures are :

	Rs.	Rs.
Price offered		8,900
Direct material	1,800	
Direct labour	3,200	
Variable overhead excluding sales commission	<u>1,100</u>	
Sales commission @ 5%	445	<u>6,545</u>
Profit		2,355

It can be seen from the above that Rs. 8,900 price offered by the customer is well above the incremental cost of the additional order and the profit is above 1/3 of cost, much more than 1/9 of cost. Hence the company should accept the order. In making this recommendation, it has been assumed that the existing sales will remain unaffected by the acceptance of this order.

Comments on the pricing policy of the company

When overheads are capable of being distinguished as variable and fixed, it is wrong to club them together and charge overheads indiscriminately as a percentage of direct labour. Cost plus, as a basis of pricing, is alright for normal activity; but for incremental activity, the relevant cost is only the marginal cost and the profit on marginal activity, is normally greater than that of the original activity. Taking the whole cost and basing the price on cost plus will be misleading. It will result in loosing valuable profit opportunity for earning an additional profit.

Illustration

Chum Chum Ltd. is about to introduce a new product with the following estimates :

<i>Price per unit (in rupees)</i>	<i>Demand (in thousand units)</i>
30-00	400
31-50	380
33-00	360
34-50	340
36-00	315
37-50	280
39-00	240



4.12 Advanced Management Accounting

Costs :

Direct material	Rs. 12 per unit
Direct labour	Rs. 3 per unit
Variable overhead	Rs. 3 per unit
Selling expenses	10% on sales
Fixed production overheads	Rs. 14,40,000
Administration expenses	Rs. 10,80,000

Judging from the estimates, determine the tentative price of the new product to earn maximum profit.

Solution

Chum–Chum Ltd.

**Statement for determining tentative price
of the new product, from estimates, to earn maximum profit**

<i>Price per unit (Rs.)</i>	<i>Demand (in lakhs of unit)</i>	<i>Sales revenue (in Rs. lakhs)</i>	<i>Variable costs (in Rs. lakhs) (Rs. 18 p.u. + 10% of selling price)</i>	<i>Contribution (in Rs. lakhs)</i>
(a)	(b)	(c)	(d)	(c–d)
30-00	4.00	120.00	84.00	36.00
31-50	3.80	119.70	80.37	39.33
33-00	3.60	118.80	76.68	42.12
34-50	3.40	117.30	72.93	44.37
36-00	3.15	113.40	68.04	45.36
37-50	2.80	105.00	60.90	44.10
39-00	2.40	93.60	52.56	41.04

The tentative price of the new product should be Rs. 36 per unit. At this price the profit of Chum-Chum Ltd. is maximum, the maximum profit of the concern comes to Rs. 20,16,000 (Refer to working note).

Working note :

Maximum profit

= Maximum contribution – {Fixed production overhead + Administration expenses}

= Rs. 45,36,000 – {Rs. 14,40,000 + Rs. 10,80,000} = Rs. 20,16,000



4.6.2 Rate of Return Pricing : Determination of return on capital employed is one of the most crucial aspect of price fixation process. In this process instead of arbitrarily adding a percentage on cost for profit, the firm determines an average mark up on cost necessary to produce a desired rate of return on its investment. Under this method three issues arise:

- (a) The basis on which the capital employed is computed.
- (b) Which items should be covered in the return on capital.
- (c) What rate of return can be regarded as fair?

The rate of return to be earned by the firm or industry must depend on the risk involved..., The desirability of earning adequate profits for the purpose of ploughing back into business should be kept in mind.

It would be correct to assume that allowing the industry to earn adequate return on the capital employed would attract additional capital and increase the number of factories and production of all commodity which must ultimately lead to competition and reduction in costs and prices.

Illustration

Electromatic Excellers Ltd. specialises in the manufacture of novel transistors. They have recently developed a technology to design a new radio transistor capable of being used as an emergency lamp also. They are quite confident of selling all of the 8,000 units that they would be making in a year. The capital equipment that would be required will cost Rs. 25 lakhs. It will have an economic life of 4 years and no significant terminal salvage value.

During each of the first four years promotional expenses are planned as under:

Year	1	2	3	4
Advertisement (Rs.)	1,00,000	75,000	60,000	30,000
Other expenses (Rs.)	50,000	75,000	90,000	1,20,000

Variable costs of producing and selling the unit would be Rs. 250 per unit.

Additional fixed operating costs incurred because of this new product are budgeted at Rs. 75,000 per year.

The company's profit goals call for a discounted rate of return of 15% after taxes on investments on new products. The income tax rate on an average works out to 40%. You can assume that the straight line method of depreciation will be used for tax and reporting.

Work out an initial selling price per unit of the product that may be fixed for obtaining the desired rate of return on investment.

Present value of annuity of Re. 1 received or paid in a steady stream throughout 4 years in the future at 15% is 3.0079.



4.14 Advanced Management Accounting

Solution Determination of initial selling price

Let the selling price be Rs. X

Sales value : Rs. 8,000 X

Annual cash costs are :

	Rs.
Variable cost : 8,000 units × Rs. 250	20,00,000
Advertisement and other expenses	1,50,000
Additional fixed costs	75,000
Total cash cost	22,25,000

$$\text{Depreciation per annum} = \frac{\text{Rs. } 25,00,000}{4} = \text{Rs. } 6,25,000$$

$$\text{Profit for taxation : Rs. } 8,000 \times \text{Rs. } X - (\text{Rs. } 22,25,000 + \text{Rs. } 6,25,000)$$

$$= \text{Rs. } 8,000 X - \text{Rs. } 28,50,000$$

Tax at 40% on profit :

$$40\% \text{ of } \{\text{Rs. } 8,000 X - \text{Rs. } 28,50,000\} = \text{Rs. } 3,200 X - \text{Rs. } 11,40,000$$

Total annual cash outflow :

$$\text{Rs. } 22,25,000 + (\text{Rs. } 3,200 X - \text{Rs. } 11,40,000) = \text{Rs. } 3,200 X - \text{Rs. } 10,85,000$$

Net annual cash inflow :

$$\text{Rs. } 8,000 X - (\text{Rs. } 3,200 X + \text{Rs. } 10,85,000) = \text{Rs. } 4,800 X - \text{Rs. } 10,85,000$$

Now, present value of initial cash outflow = Present value of cash inflow

$$\text{or Rs. } 25,00,000 = (\text{Rs. } 4,800 X - \text{Rs. } 10,85,000) \times 3.0079$$

$$\text{or } X = \text{Rs. } 399.20$$

Hence selling price should be Rs. 399.20 per unit.

Alternative Solution

	Rs.
Total variable costs per year	20,00,000
(8,000 × Rs. 250)	
Promotional costs per year	1,50,000
Fixed operating costs per year	75,000
	22,25,000
Less: Income tax 40% (tax shield)	8,90,000
	13,35,000



Less: Tax saving on depreciation	2,50,000
$\left(\frac{\text{Rs. } 25,00,000}{4} \times 40\% \right)$	
Net annual cash outflow	10,85,000
PV factor for 4 years @15% : is 3.0079	
Therefore, present value of annual cash outflow : (Rs. 10,85,000 × 3.0079)	32,63,572
Initial investment	25,00,000
Present value of total outlay	57,63,572
Divide the present value of total outlay by PV factor to get required annual revenue after tax	
(Rs. 57,63,572 ÷ 3.0079)	19,16,145
Required annual revenue before tax :	31,93,575
$\left(\text{Rs. } 19,16,145 \times \frac{100}{60} \right)$	
Unit selling price :	399.20
$\left(\frac{\text{Rs. } 31,93,575}{8,000 \text{ units}} \right)$	

4.6.3 Variable costs pricing : We have seen a number of decisions based on variable or marginal costing principle in the chapter of Marginal Costing. Pricing based on total costs is subjected to two limitations. They are :

- (a) the allocation of inter-departmental overheads is based on an arbitrary basis; and
- (b) the allocation overheads will require estimation of normal output which often cannot be done precisely.

In order to avoid these complications, variable costs which are considered as relevant costs are used for pricing, by adding a mark up to include fixed costs allocation also.

4.6.4 Competitive pricing : When a company sets its price mainly on the consideration of what its competitors are charging, its pricing policy under such a situation is called competitive pricing or competition-oriented pricing. It is not necessary under competitive pricing to charge the same price as charged by the concern's competitors. But under such a pricing the concern may keep its prices lower or higher than its competitors by a certain percentage. *Its own costs or demand may change*, but the concern maintains its price because its competitors maintain their prices. Conversely, the concern will change its price when its competitors change their



4.16 Advanced Management Accounting

price, even if its own costs or demand have not altered. Different type of competitive pricing in **vogue are as follows:**

- (i) Going rate pricing
- (ii) Sealed bid pricing

(i) Going rate pricing: It is a competitive pricing method under which a firm tries to keep its price at the **average level** charged by the industry. The use of such a practice of pricing is specially useful where it is difficult to measure costs. Adoption of going rate pricing will not only yield fair return but would be least disruptive for industry's harmony.

Going rate pricing primarily characterizes pricing practice in homogeneous product markets, The concern selling a homogeneous product in a highly competitive market has actually very little choice about the setting of its price. There is apt to be a market determined price for the product, which is not established by any single firm or clique of firms but through the collective interaction of buyers and sellers. The concern which is going to charge more than the going rate would attract virtually no customers. The concern should not charge less because it can dispose of its entire output at the going rate. Thus, under highly competitive conditions in a homogeneous product market (such as food, raw materials and textiles) the concern really has no pricing decision to make. The major challenge before such a concern is good cost control. Since promotion and personnel selling are not in the picture, the major marketing costs arise in physical distribution.

In pure oligopoly, where a few large concerns dominate the industry, the concern also tends to charge the same price as is being charged by its competitors. Since there are only a few concerns, each firm is quite aware of others' prices, and so are the buyers.

This does not mean that the going price in an oligopoly market will be in practice indefinitely. It cannot, since industry costs and demand change over time.

(ii) Sealed bid-pricing: Competitive pricing also dominates in those situations where firms compete on the basis of bids, such as original equipment manufacture and defence contract work. The bid is the firms offer price, and it is a prime example of pricing based on expectations of how competitors will price rather than on a rigid relation based on the concern's own costs or demand. The objective of the firm in the bidding situation is to get the contract, and this means that it hopes to set its price lower than that set by any of the other bidding firms. But however the firm does not ordinarily set its price below a certain level. Even when it is anxious to get a contract in order to keep the plant busy, it can not quote price below marginal cost. On the other hand, if it raises its price above marginal cost, it increases its potential profit but reduces its chance of getting the contract.

4.6.5 Incremental pricing : Incremental pricing is used because it involves comparison of the impact of decisions on revenues and cost. If a pricing decision results in a greater increase in revenue than in costs, it is favourable. Such a decision is not merely confined to comparison of revenues and costs. It also permits that consideration being given to other objectives of the business. Thus profitability can be set as the matter of primary consideration and then the decision can be adjusted to bring it in consonance with the other decision of the business.



The following points will be useful to show how this technique gives consideration to all repercussions of a decision.

1. **Relevant cost analysis:** This technique considers changes in costs rather than in average cost. Overhead allocations are irrelevant.
2. **Product-Line relationship analysis:** This technique necessitates consideration being given to possible complementary relations in demand. Sale of one product may lead to the sale of a complementary product. This overall effect on profitability has to be evaluated.
3. **Opportunity cost analysis:** The opportunity costs should be covered by the incremental revenue. A price which results in an incremental revenue which in turn merely covers the incremental costs is not sufficient. If the opportunity foregone is greater than incremental revenue, the decision is not sound.
4. **Time factor analysis:** The decision should take into account the short run and long run effects. A high price may increase its immediate profits but may lead to loss of revenue in the long run owing to competitors snatching the business.
5. **CVP analysis:** In fixing prices consideration should be given to price volume relationship. The responsiveness of the market to the price should be such that the volume is increased so that fuller utilisation of plant is achieved.
6. **Risk analysis:** Consideration should also be given to the evaluation of uncertainty. The decision taken should be able to maximise the expected value.

4.7 PRICING STRATEGIES

Pricing strategy is defined as a broad plan of action by which an organisation intends to reach its goal. Some illustrative strategies are:-

- Expanding product lines that enjoy substantial brand equity
- Offer quantity discounts to achieve increase in sales volume.

Since the right amount of volume has to be selected to optimise profit, sufficient promotional activities are necessary. In some cases it may even take a long time for the producer to establish. There are various type of pricing strategies which firm can adopt. Few of them are as follows :

4.7.1 Market-Entry strategies: While preparing to enter the market with a new product, management must decide whether to adopt a skimming or penetration pricing strategy.

(a) Skimming pricing: It is a policy of high prices during the early period of a product's existence. This can be synchronised with high promotional expenditure and in the later years the prices can be gradually reduced. The reasons for following such a policy are :

- (i) **Inelastic demand:** The demand is likely to be inelastic in the earlier stages till the product is established in the market.



4.18 Advanced Management Accounting

- (ii) **Sales boost:** The charge of high price in the initial periods serves to skim the cream of the market that is relatively insensitive to price. The gradual reduction in price in the later year will tend to increase the sales.
 - (iii) **Assured profit:** This method is preferred in the beginning because in the initial periods when the demand for the product is not known the price covers the initial cost of production.
 - (iv) **Cost revenue matching:** High initial capital outlays, needed for manufacture, results in high cost of production. Added to this, the manufacturer has to incur huge promotional activities resulting in increased costs. High initial prices will be able to finance the cost of production particularly when uncertainties block the usual sources of capital.
- (b) **Penetration pricing :** This policy is in favour of using a low price as the principal instrument for penetrating mass markets early. It is opposite to skimming price. The low price policy is introduced for the sake of long-term survival and profitability and hence it has to receive careful consideration before implementation

Penetrating pricing, means a pricing suitable for penetrating mass market as quickly as possible through lower price offers. This method is also used for pricing a new product. In order to popularise a new product penetrating pricing policy is used initially.

The company may not earn profit by resorting to this policy during the initial stage. Later on, the price may be increased as and when the demand picks up. The use of this policy by the existing concerns will discourage the new concerns to enter the market. This pricing policy is also known as “**stay-out-pricing**”.

The three circumstances in which penetrating pricing policy can be adopted are as under:

- (i) **Elastic demand:** When demand of the product is elastic to price. In other words, the demand of the product increases when price is low.
- (ii) **Mass production:** When there are substantial savings on large scale production. Here increase in demand is sustained by the adoption of low pricing policy.
- (iii) **Frighten competition:** When there is threat of competition. The prices fixed at a low level act as an entry barrier to the prospective competitors.

4.7.2 Price discounts and differentials :

Distributors’ discounts : It means price deductions that systematically make the net price vary according to buyer’s position in the chain of distribution. These discounts are given to various distributors in the trade channel e.g., wholesalers, dealers and retailers. As these discounts create differential prices for different customers on the basis of marketing functions performed by them, so they are also called as functional discounts.



I *Various forms of Distributors discounts* : Distributors discounts can be classified under the following three categories:

- (i) ***Different net prices for different distributor levels***: Net prices are commonly used as the device for quoting differential prices to distributors. A list of such prices is given to authorised dealers by manufacturers to facilitate their task of billing.
- (ii) ***A uniform list price modified by a structure of discounts, each rate so determined is applied to a different level of distributor*** : This method is commonly used as it is easy to deal with its use in diverse trade channels. By merely varying the discounts it facilitates cyclical and seasonal adjustments in prices also. Its use helps in keeping actual prices a secret not only among distributors but also among competitors and customers. This method gives to manufacturers greater control over the realised margin of different categories of distributors.
- (iii) ***A single discount combined with differing supplementary discounts to different levels of distributors***: Supplementary discount gives clear cut picture about the trade channel structure or the suggested resale prices. These discounts reflect distributors cost at different stages and competition between different kinds of distributors. These discounts are often very elaborate and are in use due to tradition in the industry.
 - ***Pre-requisites for determining Distributors' Discounts***: The economic function of distributors discounts is to induce different categories of distributors to perform nicely, their respective marketing functions. As such, to build up a discount structure on sound economic lines, it is essential to know about :
 - (i) The services to be performed by the distributors at different levels.
 - (ii) Knowledge about distributors' operating costs.
 - (iii) Discount structure adopted by competitors.
 - (iv) Effect of discounts on distributor's population.
 - (v) Costs of selling to different channels.
 - (vi) Availability of opportunities for market segmentation.
 - ***Quantity discounts*** : Quantity discounts are price reductions related to the quantities purchased. It may take several forms. It may be related to the size of the order which is being measured in terms of physical units of a particular commodity. This is practicable where the commodities are homogeneous or identical in nature, or where they may be measured in terms of truck-loads.

However, this method is not applicable in the case of heterogeneous commodities as it is difficult to add them in terms of physical units or truck loads e.g. textile and drug industry. Quantity discounts are useful in the marketing of materials and supplies but are rarely used for marketing equipment and components.



4.20 Advanced Management Accounting

Objectives of quantity discounts: The main objective of quantity discounts is to reduce the number of small orders and thus avoid the high cost of servicing them.

Advantages: Quantity discount system enables the dealer to avail such discounts by buying larger lots. The economic buying by a dealer may enable him to charge lower prices from his customers thereby benefiting them. Finally, lower prices to customers may increase their demand for the commodities which in turn may enable the dealer to purchase larger quantities, reaping still greater discounts, and the manufacturer to reap economies of large-scale production. In some cases, discounts become a matter of trade custom.

Disadvantages: Dealers may find it cheaper to purchase their requirement of commodities from wholesalers, availing themselves of these quantity discounts than from the manufacturers directly. This is because the wholesalers may pass on some of their discount to the dealers. Such a practice may affect the image of the manufacturer in the minds of the dealers.

Cash Discounts : Cash discounts are price reductions based on promptness of payment. It is a convenient device to identify and overcome bad credit risks. In those trades where credit risk is high, the percentage of cash discount given is also high. If a buyer decides to purchase goods on credit, he has to pay a higher price by foregoing the cash discount.

Time differentials : Charging different prices on the basis of time is another kind of price discrimination. Under time differentials the objective of the seller is to take advantage of the fact that buyers demand elasticities vary over time. Time differentials can be classified under the following heads.

- (i) **Clock-time differentials:** The price differentials are known as clock-time differentials when different prices are charged for the same service or commodity at different times within a 24 hour period. Common examples of these are, the differences between the day and night rates on trunk calls; difference between the rates charged in morning and regular shows in cinema houses.
- (ii) **Calendar-time differentials:** Here price differences are based on a period longer than 24 hours. For example; seasonal price rate variations in the case of winter clothing or hotel accommodation at a hill station and a tourist resort. The main objective here is to exploit the time preferences of the buyers.
- (iii) **Geographical price differentials:** It refers to price differentials based on buyers location. The objective here is to exploit the differences in transport-cost, due to the varying distances between the locations of the plants and customers.
- (iv) **Consumer category price differentials:** Price discriminations is frequently practised according to consumer categories in the case of public utilities, e.g., electricity, transportation, etc. Electricity companies charge different rates for residential consumers and industrial consumers. The rates may also differ to domestic power, light and fan.

4.7.3 Price Discrimination : Price discrimination means charging different prices and it takes various forms according to whether the basis is customer, product, place or time. These are illustrated as under:



- (a) **Price discrimination on the basis of customer:** In this case, the same product is charged at different prices to different customers. It is, however, potentially disruptive of customer relations.
- (b) **Price discrimination based on product version:** In this case, a slightly different product is charged at a different price regardless of its cost-price relationship. If, for example, a table with wooden top can be sold at Rs. 400, a table with sunmica top costing Rs. 175 extra is sold at Rs. 575. The higher premium in the latter case does not necessarily reflect the higher production cost.
- (c) **Price discrimination based on place:** An example of this method is the seats in cinema theatre where the front seats are charged at lower rates than the back seats.
- (d) **Price discrimination based on time:** An example of this method is the practice of giving off-season concession in sale of fans or refrigerators just after the summer season.

Price discrimination is possible if the following conditions are satisfied :

- (a) the maker must be capable of being segmented for price discrimination;
- (b) the customers should not be able to resell the product of the segment paying higher price; and
- (c) the chance of competitors' underselling in the segment of higher prices should not be possible.

4.7.4 Geographic Pricing Strategies : In pricing, a seller must consider the costs of shipping goods to the buyer. These costs grow in importance as freight becomes a larger part of total variable costs. Pricing policies may be established whereby the buyer pays all the freight expense, the seller bears the entire cost, or the seller and buyer share this expense. The strategy chosen can influence the geographic limits of a firm's market, locations of its production facilities, sources of its raw materials, and its competitive strength in various geographic markets.

Point-of-Production Pricing : In a widely used geographic pricing strategy, the seller quotes the selling price at the point of production and the buyer selects the mode of transportation and pays all freight costs.

This method of pricing is referred as FOB factory pricing.

Uniform Delivered Pricing : Under uniform delivered pricing, the same delivered price is quoted to all buyers regardless of their locations.

Uniform delivered pricing is typically used where freight costs are a small part of the seller's total cost. This strategy is also used by many retailers who believe "free" delivery is an additional service that strengthens their market position.

Zone-Delivered Pricing : Zone-delivered pricing divides a seller's market into a limited number of broad geographic zones and then sets a uniform delivered price for each zone.



4.22 Advanced Management Accounting

Freight-Absorption Pricing : Under freight-absorption pricing, a manufacturer will quote to the customer a delivered price equal to its factory price *plus* the freight costs that would be charged by a competitive seller located near that customer.

4.8 PARETO ANALYSIS

Pareto Analysis is a rule that recommends focus on the most important aspects of the decision making in order to simplify the process of decision making. It is based on the 80 : 20 rule that was a phenomenon first observed by Vilfredo Pareto, a nineteenth century Italian economist. He noticed that 80% of the wealth of Milan was owned by 20% of its citizens. This phenomenon, or some kind of approximation of it say, (70 : 30 etc.) can be observed in many different business situations. The management can use it in a number of different circumstances to direct management attention to the key control mechanism or planning aspects. It helps to clearly establish top priorities and to identify both profitable and unprofitable targets.

4.8.1 Usefulness of Pareto Analysis : It provides the mechanism to control and direct effort by fact, not by emotions. It helps to clearly establish top priorities and to identify both profitable and unprofitable targets.

Pareto analysis is useful to:

- Prioritize problems, goals, and objectives Identify root causes .
- Select and define key quality improvement programs Select key customer relations and service programs Select key employee relations improvement programs.
- Select and define key performance improvement programs Maximize research and product development time.
- Verify operating procedures and manufacturing processes.
- Product or services sales and distribution.
- Allocate physical, financial and human resources.

4.8.2 Application of Pareto Analysis : Pareto analysis may be applicable in the presentation of Performance Indicators data through selection of representative process characteristics that truly determine or directly or indirectly influence or conform the desired quality or performance result or outcome. The Pareto Analysis is generally applicable to the following business situations :

(i) Pricing of a product :

- In the case of a firm dealing with multi products, it would not be possible for it to analyse cost-profit- price -volume relationships for all of them.
- In practice, in case of such firm approximately 20% of products may account for about 80% of total sales revenue. Pareto Analysis is used for analysing the firm estimated sales revenues from various products and it might indicate that



approximately 80% of its total sales revenue is earned from about 20% of its products.

- Such analysis helps the top management to delegate the pricing decision for approximately 80% of its products to the lower levels of management, thus freeing themselves to concentrate on the pricing decisions for products approximately 20% which are essential for the company's survival.
- Thus, a firm can adopt more sophisticated pricing methods for small proportion of products that jointly accounts for approximately 80% of total sales revenue. For the remaining 80% of the products which account for 20% of total sales revenue the firm may use cost based pricing method.

(ii) Customer Profitability analysis:

- Instead of analysing products, customers can be analysed for their relative profitability to the organisation.
- Again it is often found that approximately 20% of customers generate 80% of the profit. There will always be some customers who are less profitable than others, just as some products are less profitable than others.
- Such an analysis is useful tool for evaluation of the portfolio of customer profile and decision making such as whether to continue serving a same customer group, what is the extent of promotion expenses to be incurred.

(iii) ABC analysis- Stock Control: Another application of Pareto analysis is in stock control where it may be found that only a few of the goods in stock make up most of the value. In practice approximately 20% of the total quantity of stock may account for about 80% of its value. The outcome of such analysis is that by concentrating on small proportion of stock items that jointly accounts for 80% of the total value, a firm may well be able to control most of monetary investment in stocks.

(iv) Application in Activity Based Costing: In Activity Based Costing it is often said that 20% of an organisation cost drivers are responsible for 80% of the total cost. By analysing, monitoring and controlling those cost drivers that cause most cost, a better control and understanding of overheads will be obtained.

(v) Quality Control :

- Pareto analysis seeks to discover from an analysis of defect report or customer complaints which "vital few" causes are responsible for most of the reported problems.
- Often, 80% of reported problems can usually be traced to 20% of the various underlying causes. By concentrating once efforts on rectifying the vital 20%, one can have the greatest immediate impact on product quality.



4.24 Advanced Management Accounting

- The Pareto Analysis indicates how frequently each type of failure (defect) occurs. The purpose of the analysis is to direct management attention to the area where the best returns can be achieved by solving most of quality problems, perhaps just with a single action.

Example

A Toy company performs a Pareto analysis, given a set of 'defect types' and frequencies of their occurrence. The sample data consists of information about 84 defective items. The items have been classified by their 'defect types' as follows:

Defect Types	No. of Types
Cracks (due to mishandling of raw material)	10
Improper shapes	8
Incomplete	8
Surface scratches	53
Other (due to bad quality raw material)	5

Frequency table indicating the frequency of occurrence of defects in decreasing order of their occurrence will be as follows :

Defect type	No. of items	%	Cummulative %
Surface scratches	53	63.1	63.1
Cracks	10	11.9	75
Improper shape	8	9.52	84.52
Incomplete	8	9.52	94.05
Other	5	5.95	100

The pareto chart is then constructed for defect type. For graphical construction of Pareto Chart the students may refer to recommended books on the subject.

The purpose of Pareto analysis in this example, is to direct attention to the area where best returns can be achieved by solving most of the quality problems, perhaps just with a single action. In this case, use of good quality raw material say plastic may solve 63% of problem and if raw material is handled properly at least 75% the problems may be overcome.



SUMMARY

- Pricing decisions should be made very carefully since they affect the long term profitability of the concern.
- There are various methods available for pricing of a finished product viz. cost plus pricing, rate of return pricing, variable cost pricing, competitive pricing, incremental pricing et.al.
- Pricing of a new product is generally tough because of the uncertainty involved in the estimation of their demand.
- Pricing strategy is defined as a broad plan of action by which an organization intends to reach its goals.
- There are primarily two pricing strategies available namely Skimming pricing Strategy and Penetration Pricing Strategy.
- Pareto analysis is the rule that focuses on the most important aspect of decision making.
- It is based on the 80:20 phenomenon, first observed by Vilfredo Pareto.
- Activity Based Costing is the method of costing which involves identification of cost drivers for various items of overheads.

SELF-EXAMINATION QUESTIONS

1. Fill in the blanks:
 - (a) There is no price policy in
 - (b) If few sellers occupy a major share in the market, the situation is called
 - (c) Charging a high price in the beginning of the product's life cycle is known as.....
 - (d) Charging of low prices in the beginning of the life of a new product is known as
2. State whether the following statements are *true or false*:
 - (a) Cost plus pricing does not take into account competition and demand.
 - (b) When price reductions are introduced to increase sales revenue, the revenue line will be a straight line.
 - (c) Highest price yielding largest contributory margin need not necessarily maximise profits.
 - (d) In fixing selling prices, volume consideration should be taken into account so that fuller utilisation of plant capacity is achieved.
 - (e) A major consideration for skimming pricing is threat of competition.



4.26 Advanced Management Accounting

3. State whether the following statements are *true or false*:
- (a) Where a number of factories are owned by a company, weighted average cost can be used for price fixation.
 - (b) Price fixation is based on the total capacity of output which factory is capable of manufacturing.
 - (c) Survival and progress of a firm depend on its ability to maintain and replace, whenever necessary, its fixed assets.
 - (d) Depreciation should be allowed on replacement cost basis for price fixation.
4. Fill in the blanks :
- (a) Cost plus pricing ignores and
 - (b) The rate of return to be earned by factory should cover the involved in business.
 - (c) Price discrimination between various customers isto customer relations.
 - (d) Pricing based on total cost is not considered accurate because of the difficulty involved in.....
5. Discuss briefly the concept of skimming pricing policy.
6. ACE Ltd. has an inventory of 5,000 units of a product left over from last year's production. This product is no longer in demand. It is possible to sell these at reduced prices through the normal distribution channels. The other alternative is ask someone to take them on "as is where is" basis. The latter alternative will cost the company Rs 5,000.

The company produced 2,40,000 units of the product last year, when the unit costs were as under:

	Rs.	Rs.
Manufacturing cost :		
Variable	6.00	
Fixed	<u>1.00</u>	<u>7.00</u>
Selling & Distribution cost:		
Variable	3.00	
Fixed	<u>1.50</u>	<u>4.50</u>
Total cost		<u>11.50</u>
Selling price per unit		<u>14.00</u>



Required:

Should the company scrap the items or sell them at a reduced price? If you suggest the latter. What minimum price would you recommend ?

7. Somesh of Agra presently operates its plant at 80% of the normal capacity to manufacture a product only to meet the demand of Government of Tamil Nadu under a rate contract.

He supplies the product for Rs. 4,00,000 and earns a profit margin of 20% on sale realisations.

Direct cost per unit is constant.

The indirect costs as per his budget projections are:

Indirect costs	20,000 units (80% capacity)	22,500 units (90% capacity)	25,000 units (100% capacity)
	Rs.	Rs.	Rs.
Variable	80,000	90,000	1,00,000
Semi-variable	40,000	42,500	45,000
Fixed	80,000	80,000	80,000

He has received an order for the product equal to 20% of its present operations. Additional packing charges on this order will be Rs. 1,000. Arrive at the price to be quoted for the export order to give him a profit margin of 10% on the export price.

8. What is Pareto Analysis.
9. Explain the application of Pareto Analysis in the following business situations :
- (i) Stock Control
 - (ii) Customer profitability
 - (iii) Quality Control
 - (iv) Pricing of a product.

ANSWERS TO SELF-EXAMINATION QUESTIONS

- 1. (a) pure competition, (b) oligopoly, (c) skimming price, (d) penetration price.
- 2. (a) True, (b) False, (c) True, (d) True, (e) False.
- 3. (a) It is only one of the factors,
- (b) False,
- (c) True,
- (d) Depends on actual circumstances.



4.28 Advanced Management Accounting

4. (a) Demand, competition,
(b) risk,
(c) disruptive,
(d) determining cost where level of output changes.
6. If the company gets anything more than Rs. 2 per unit, then it is worthwhile to sell the stock of 5,000 units & earn on additional contribution.
7. Price to be quoted Rs. 50,000 for the order of 4,000 units.