

## **COST AND COST CLASSIFICATIONS - COST SHEET**

### **STRUCTURE**

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### **10.0 OBJECTIVES**

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The objectives of studying this unit:-

- To understand the concept of cost
- To classify the costs
- To understand the cost sheet
- To understand the elements of cost.
- To prepare the cost sheets.

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## 10.1 INTRODUCTION

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A manufacturing organisation converts raw materials into finished products. For the purpose, it employs labour and provides other facilities. While compiling production cost, amounts spent on all these facilities are required to be ascertained. Thus, cost ascertainment involves (a) collection and classification of costs according to cost elements (b) its allocation or apportionment to cost centres or units (c) choice of an appropriate method of costing and (d) selection of an appropriate costing technique. Costs are primarily classified into various elements for accounting and control.

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## 10.2 CONCEPT OF COST

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Cost represents a sacrifice, a foregoing or a release of something of value. It is reckoned in money and usually appears as payment of money. It is money outlay for productive factors.

Costs are expenditure incurred in doing something. Costing is the process of determining the cost of doing something i.e cost of manufacturing an article, rendering service or performing a function.

Cost is composed of three elements- material, labour and expenses or overheads. Each of these costs can be further classified as (a) Direct and (b) Indirect.

Direct costs are costs which can be easily identified with a particular Product, Process or Department. Indirect costs refers to costs which cannot be conveniently identified with a particular product. Process or Department. Indirect costs are common costs like rent, repairs salaries, which are incurred for the benefit of a number of cost units or cost centres.

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## 10.3 COST CLASSIFICATIONS

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Cost items are analysed or grouped according to their common characteristics which is some independent factor. There are many objectives of cost classifications depending on the requirements of management. The different cost classifications are as follows:-

### 10.3.1 Cost Classification by Elements :

The constituent elements of costs are broadly classified into three distinct elements i.e. materials, labour and expenses. These three elements of cost can be further grouped into direct and indirect categories. Direct materials refer to the cost of materials which are conveniently and economically traceable to specific units of output for example. Raw cotton in textiles, crude oil in making diesel. The indirect materials refer to materials that are needed for the completion of the product but whose consumption with regard to the product is either so small or so complex that it would not be appropriate to treat it as a direct material. For example, stationery lubricants, cotton waste etc.

### 10.3.2 Cost Classification by Function.

A business organisation has to perform several functions such as Manufacturing, Administration, Selling and Distributing and Research and Development. Functional classification of cost implies that the business performs many functions for which costs are incurred. Expenses or Costs are usually classified by function and grouped under the headings of Manufacturing, Selling and Administrative costs in measuring net income.

Manufacturing costs are all check costs incurred to manufacture the products and to bring them to a saleable condition. This includes direct material, direct labour and indirect manufacturing costs or overheads. Administration costs are incurred for formulation of policy, directing the organisation and controlling the activities excluding the cost of research, development, production, selling and distribution. These costs include salary of executives, office, staff, office rent, stationery, postage etc. Selling costs, include the cost of creating and stimulating demand and getting customers. For example, advertisement, salary and

commission to salesmen, packing. Distribution costs include the cost of warehouse, freight, cartage etc.

Research and Development costs are incurred in the process of finding out new ideas, new processes by experiments or other means of putting the results of such experiments on a commercial basis. Functional classification of cost is important because it provides an opportunity to the management to evaluate the efficiency of departments performing different functions in an organisation.

### **10.3.2 Cost Classification by variability:**

Cost can be classified as (i) fixed (ii) variable and (iii) semi -fixed or semi variable in terms of their variability or changes in cost behaviour in relation to changes in output or activity or volume of production. Activity may be indicated in any form such as units of output, hours worked, sales, etc. The separation of costs into variable and fixed categories is the most difficult part of the costing operation. Certain costs are easily identifiable as variable or fixed while other costs can be segregated only after careful consideration of their nature and an examination of their behaviour.

#### **i) Fixed costs:**

Fixed cost is a cost which does not change in total for a given time period despite wide fluctuations in output or volume of activity. These costs must be met by the organisation irrespective of the volume level. These costs are also known as capacity costs, period costs or stand - by costs; for example, rent, property taxes, supervisor's salary, advertising, insurance etc.

#### **ii) Variable costs:**

Variable cost are those costs which vary directly and proportionately with the output. There is a constant ratio between the change in the cost and the change in the level of output. Direct materials and labour are the examples of variable costs. Thus, all these costs which tend to vary directly with variations in volume of output are variable costs. However, it must be remembered that variable costs remain the same or approximately the same in amount per unit of production regardless of increase or decrease in volume.

iii) **Semi variable or semi fixed costs:**

There is another group of costs in between the fixed and variable costs. It is semi variable or semi fixed costs. These costs vary in some degree with volume but not in direct proportion. Such costs are fixed only in relation to specified constant conditions. Semi fixed costs are those costs which remain constant upto a certain level of output after which they become variable. For example: maintenance of building, depreciation of plant, supervisor's salary, telephone expenses etc.

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## 10.4 COST SHEET

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Cost sheet is a statement prepared to present the detailed costs of total output during a period. It provides information relating to cost per unit at different stages of total cost of production. The preparation of cost sheet is one of the important and primary function of cost accounting. Cost sheet is not an account. There is a prescribed form for preparation of cost sheet. A cost sheet is a statement of cost prepared for a given period of time in such a manner that it indicates various elements of cost as clearly as possible. The cost sheet is useful in ascertaining the total cost of production per unit, formulation of production plan, fixing up the selling price and minimize the production cost. Sometimes standard cost data are provided to facilitate comparison with the actual cost increased. The preparation of the cost sheet requires understanding of the treatment of the following items:-

- a) **Stock of raw materials** : The opening and closing stock of raw materials are to be adjusted with purchase of Raw materials in order to determine the value of raw materials consumed for the output produced. Carriage/ Freight inward and Octroi on purchase etc. also to be added to purchases. This is a part of Prime Cost.
- b) **Stock of Work in Process** – The value of stock of work in process is a part of Factory cost and therefore, it should be adjusted with factory overheads. Sale of scrap should be deducted from the factory overheads in order to determine the total factory cost.
- c) **Stock of Finished goods** :- Finished goods covers the products on which factory work has been completed. It is the cost of completed production. The opening and closing values of finished goods are to be adjusted with the total cost of production in order to arrive at cost of sales.

**10.4.1 Expenses excluded from cost sheet:**

There are certain expenses /costs which do not form a part of cost sheet. Some of these expenses are an apportionment of profit. Examples of these expenses are -

- i) Dividend to shareholders
- ii) Income Tax
- iii) Interest on loan
- iv) Donations paid
- v) Capital expenditure
- vi) Capital loss on sale of assets.
- vii) Commission to Partners / Managing Director
- viii) Discount on issue of shares/ debentures
- ix) Underwriting commission.
- x) Writing of goodwill/ bad debts
- xi) Provision for Taxation, Bad Debts or any kind of Fund or reserves.

**10.4.2 Specimen of cost sheet.**

The specimen form of a cost sheet is given below:

Cost sheet for the period .....

(Production ... Units )

Particulars	Total Cost Rs.	Cost Per Unit Rs.
<b>Direct Materials</b>		
Raw Materials		
Opening stock Materials :		
Add : Purchases .....		
Add : Carriage / Freight Inward .....		
Less : Closing stock .....		
Cost of materials consumed		
Direct Labour		
Direct Expenses		
	-----	-----
<b>Prime cost</b>		
Factory overheads		
Add: Work in Progress (Opening )		
Less : Work in Progress (Closing )		
<b>Works /Factory cost</b>		
Office and administrative expenses		
Cost of Production (of goods produced)		
Add: Op. Stock of finished goods		
Less closing of finished goods		
cost of production (of goods sold)		
Selling & Distribution expenses		
<b>Cost of Sales</b>		

Add. Profit (Loss)		
Sales		

#### 10.4.3 Elements of Total Cost

Costs are classified under different heads which represent the successive stages through which the cost flow.

##### i) Prime Cost

Prime cost is the basic cost of any product. It comprises of those expenses which could be traced directly to it. The prime cost consists of cost of direct materials, direct labour and direct expenses. Direct expenses include special expenses which can be identified with product or job and are charged directly to the product as part of the prime cost. For example cost of hiring special plant or machinery, cost of special moulds, design or patterns, Architect's fees, Royalties, License fees etc.

##### ii) Work cost:

Works cost of a Product consists of prime cost plus the portion of works or factory expenses chargeable against the Production. Works or factory expenses include, indirect materials indirect labour and indirect expenses. Indirect materials refer to those materials that are needed for the completion of the product but the consumption of these materials is either so small or complex that it would not be appropriate to treat it as direct materials. These are supplies that cannot be conveniently and economically charged to a specific unit of output. For example, lubricants, cotton waste, works stationery etc.

Indirect labour is that labour which does not affect the construction or the composition of the finished product. This is the labour cost of production related activities that cannot be associated with or conveniently traced to specific product through physical observation. For example, Foremen's salary and salary of employees engaged in maintenance or service work. Indirect expenses covers all expenditure incurred by the manufacturer from the time of production to its completion as delivery to customer by way of rate of product. Any cannot be allocate but which can be apportioned to or absorbed by the cost cehtres cost



units are known as indirect expenses. These expenses are incurred for the benefit of more than one product, job or activity and, therefore, must be apportioned by appropriate bases to the various functions or products. For example, lighting and heating, maintenance factory manager's salary, watch and ward department's salary etc.

**(ii) Cost of Production :**

Cost of Production consists of works cost plus an additional amount of office and administrative expenses. It includes all expenses connected with the managerial functions such as planning, organizing, directing, co-ordinating and controlling the operations of the manufacturing business. For example, office rent, salary, lighting, stationery, repairs and maintenance and depreciation of office building, audit fees, legal expenses.

**iv) Cost of Sales:**

Cost of sales consists of cost of production plus proportionate selling and distribution expenses of the product. Selling expenses include the expenses incurred for creating demand for the product such as advertisement, salaries of salesmen, selling expenses and show room expenses. Distribution expenses are those expenses incurred in connection with the delivery of goods to the customers such as packing, carriage outwards, warehouse expenses.

**Illustration -1**

Bombay Manufacturing company submits the following information on 31-3-2010

<b>Particulars</b>	<b>Rupees</b>
Sales for the year	2,75,000
Inventories at the beginning of the year-	
- Raw Materials	3,000
- Work in Progress	4,000
- Finished Goods	1,10,000
Purchase of materials	65,000
Direct Labour	6,000

Inventories at the end of the year -	
- Raw Materials	4,000
- Work in Progress	6,000
- Finished Goods	8,000
Other expenses for the year –	
Selling expenses	27,500
Administrative expenses	13,000
Factory overheads	40,000
Prepare Statement of cost	

**Solution :****Bombay Manufacturing Company****Statement of cost for the year ended 31-3-2010**

	Rs.	Rs.
Materials consumed		
Opening stock:	3,000	
+ Purchases	110000	
	113000	
- Closing stock	4000	
		109000
Direct Labour		65000
Direct Expenses		6000
		180000
<b>Prime cost</b>		
Factory overheads	40000	
+ Work in Progress (beginning )	4000	
	44000	

- Work in Progress (Closing )	6000	38000
Works cost		2,18,000
Administrative expenses		13,000
Cost of Production		2,31,000
+ Opening Stock of finished goods		7,000
		2,30,000
- Closing Stock of finished goods		8,000
		2,30,000
Selling & Distribution expenses		27,500
cost a sales		2,57,500
Profit (Bal. Fig)		17,500
Sales		2,75,000

### Illustration -2

From the following information prepare a statement showing (i) Prime cost (ii) Works cost (iii) Cost of Production (iv) Cost of Sales (v) Net profit of X Ltd. which produced and sold 1000 units in June 2009.

**Rs.**

#### Opening Stock:

Raw Materials	24,000
Finished goods	16,000

#### Closing stock:

Raw Materials	20,000
Finished goods	15,000
Purchase of Raw Materials	80,000
Sales	2,00,000
Direct Wages	35,000
Factory Wages	2,000
Carriage Inward	2,000

Carriage Outward	1,000
Factory Expenses	4,000
Office Salaries	15,000
Office Expenses	12,000
Factory Rent & Rates	2,500
Depreciation - Machinery	2,500
Bad Debts	1,500

**Solution****Ltd.****Cost Statement for June, 2009**

Particulars	Rs.	Total Cost	Cost per Unit
		Rs.	Rs.
Opening stock of materials	24,000		
Add: Purchase of materials	80,000		
Add: Carriage Inward	2,000		
	1,06,000		
Less: Closing stock of materials	20,000		
Cost of Materials consumed		86,000	86.00
Direct Wages		35,000	35.00
(i) PRIME COST		121,000	121.00
<b>Factory overheads :</b>			
Factory Wages	2,000		
Factory expenses	4,000		
Factory Rent & Rates	2,500		
Depreciation	2,500		
		11,000	11.00
(II) WORKS COST		1,32,000	132.00
<b>Administrative Overheads :</b>			
Office Salaries	15,000		
Office Expenses	12,000	27,000	27.00
(iii) COST OF PRODUCTION		1,59,000	159.00
<b>Selling &amp; Distribution Overheads :</b>			

Carriage Outward	1,000		
Bad Debts	1,500		
		2,500	2.50
<b>TOTAL COST</b>		1,61,500	161.50
Add: Opening Stock of finished goods		16,000	
		1,77,500	
Less: Closing Stock of finished goods		15,000	
(iv) Cost of Sales		1,62,500	162.50
(v) Net Profit (Bal.Fig)		37,500	37.50
Sales		2,00,000	200.00

### Illustration – 3

NRC Ltd., manufactured and sold 1000 Radio sets during the year 2009. The summarized accounts are given below :

#### Mfg. / Trading & Profit & Loss A/c

	Rs.		Rs.
To Cost of Materials	40,000	By Sales	2,00,000
To Direct Wages	60,000		
To Manufacturing Exp.	25,000		
To Gross Profit	75,000		
	<hr/>		<hr/>
	2,00,000		2,00,000
	<hr/>		
To Salaries	30,000	By Gross Profit	75,000
To Rent, Rates & Taxes	5,000		
To General Expenses	10,000		
To Selling & Distribution Exp.			
	15,000		

To Net Profit	15,000	
	<hr/>	
	<hr/> 75,000	75,000

It is estimated that output and sales will be 1200 Radio Sets in the year 2010. Prices of Materials will rise by 20% on the previous year's level. Wages per unit will rise by 5% Manufacturing expenses will rise in proportion to the combined cost of materials and wages. Selling and distribution expenses per unit will remain unchanged. Other expenses will remain unaffected by the rise in output. Prepare cost sheet showing the price at which the Radio Sets should be sold so as to earn a profit of 20% on the selling price.

### Solution

#### COST SHEET

	2009		2010	
	1000 Radios		1200 Radios	
	Total	Per Unit	Total	Per Unit
	Rs.	Rs.	Rs.	Rs.
Direct Materials	40,000	40.00	57,600	48.00
Direct Wages	60,000	60.00	75,600	63.00
PRIME COST	1,00,000	100.00	1,33,200	111.00
Manufacturing Expenses	25,000	25.00	33,300	28.00
WORKS COST	1,25,000	125.00	1,66,500	139.00
Salaries	30,000	30.00	30,000	25.00

Rent, Rates Insurance	5,000	5.00	5,000	4.00
General Expenses	10,000	10.00	10,000	8.00
COST OF PRODUCTION	1,70,000	170.00	2,11,500	176.00
Selling & Distribution Expenses	15,000	15.00	18,000	15.00
Cost of Sales	1,85,000	185.00	2,29,500	191.00
Net Profit	15,000	15.00	57,275	48.00
SALES	2,00,000	200.00	2,86,775	239.00

#### Illustration – 4.:

A factory can produce 60,000 units per year at its 100% capacity.  
The estimated cost of production are as under:-

Direct Material	-	Rs. 3 per unit
Direct Labour	-	Rs. 2 per unit

#### Indirect Expenses :

Fixed	-	Rs. 1,50,000 per year
Variable	-	Rs. 5 per unit
Semi-variable	-	Rs.50,000 per year upto 50%

capacity and an extra expenses of  
Rs.10,000 for every 25% Increase in  
capacity or part thereof.

The factory produces only against order and not for stock. If the Production programme of the factory is as indicated below and the management desires to ensure a Profit of Rs. 1,00,000 for the year, work out the average selling price at which per unit should be quoted:

First 3 months of the year 50% of capacity remaining 9 months 80% of the capacity. Ignore selling, distribution and administration overheads.

**Solution :**

Particular	First 3 months (7500 Units )	9 Months (3600 Units)	Total
	Rs.	Rs.	Rs.
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Direct Material	22500	108000	130500
Direct Labour	15000	72000	87000
	-----	-----	-----
	37500	1,80,000	2,17,500
<b>Add : Indirect Expenses:</b>			
Fixed 1: 3)	37500	112500	150000
Variable @ Rs.5 b.u.	37500	180000	217500
<b>Semi –variable</b>			
For 3 months	12500	-----	-----
@ Rs.50,000 p.a.			
For 9 months			
@ Rs.70,000 p.a.	--	525000	65000
	-----	-----	-----
Total Cost	125000	525000	650000
Profit	--	-	100000
			-----
Sales			750000
			-----

**Illustration -5**

The following figures have been taken from the books of M Ltd. as on 31.12.2009



Stock of Raw Materials on 1.1.2009	Rs.	35,000
Stock of Raw Materials on 31.12.2009	Rs.	5,000
Purchase of Materials	Rs.	50,000
Factory Wages	Rs.	45,000
Factory Expenses	Rs.	17,500
Establishment Expenses	Rs.	10,000
Finished Stock on 1.1.2009	Rs.	15,000
Finished stock on 31.12.2009	Rs.	7,500
Sales	Rs.	2,00,000

The Company manufactured 4000 units during the year 2009. The company is required to quote for the price for supply of 1000 units during the year 2010. The cost of material will increase by 15% and factory labour will cost more by 10% in the year 2010. Prepare a statement showing the price to be quoted to give the same percentage of net profit on sales and was realized during 2009.

**a) Cost Sheet for the year 2009**

	Rs.	Rs.
Opening Stock of Materials :	35,000	
+ Purchases .....	50,000	
	<u>85,000</u>	
- Closing stock of Materials	<u>5,000</u>	
Materials Consumed	80,000	20.00
Factory Wages	45,000	11.25
<b>Prime Cost</b>	1,25,000	31.25
Factory Expenses	17,500	4.37
<b>Works Cost</b>	1,42,500	35.62
Establishment Expenses	10,000	2.50
<b>Cost of Production</b>	1,52,500	38.12
Add : Opening Stock of finished goods	15,000	
	<u>1,67,500</u>	
Less : Closing stock of finished goods	<u>7,500</u>	
<b>Cost of Sales</b>	1,60,000	
Profit	40,000	
Sales	<u>2,00,000</u>	

**b) Statement showing quotation Price for 1000 units**

		<b>Rs.</b>
Materials (20 x 1000) =	20,000	
+ 15% increase	3,000	23,000
Factory wages (11.25 x 1000)=	11,250	
10% increase	1,125	12,375
<b>Prime Cost</b>		35,375
Factory Expenses (4.375 x 1000)		4,375
<b>Works Cost</b>		39,750
Establishment Expenses (2.50 x 1000)		2,500
<b>Total Cost</b>		42,250
Profit (20% on Sale i.e., 25% of Cost)		10,563
Sales		52,813

**Note :** Percentage of Profit on sales earned during the year 2002 is 20%

$$= \frac{4000}{2000} \times 100 = 20\%$$

**Illustration – 6.**

In a factory two types of T.V sets are manufactured i.e black & white + colour. From the following particulars prepare a statement showing cost and profit per T.V Set sold. There is no opening or closing stock.

	<b>B &amp; W Rs.</b>	<b>Colour Rs.</b>
Materials	273000	10,80,000
Labour	156000	6,20,000

Works overhead is charged at 60% of Prime cost and Office overhead is taken at 20% at Works cost. The selling price of B & W is Rs.60,00 and that of colour is 10000. During the period 200 B & W and 400 colour T.V. sets were sold. The selling expenses are Rs. 50 per T.V.Set.

**Solution****B) Statement of Cost and Profit**

Particulars	B & W	Colour	
	Rs.	Rs.	Per Unit
Materials	273000	10,80,000	2700
Labour	156000	6,20,000	1550
Prime Cost	429000	17,00,000	4250
Add : Work Overheads (60% of Prime Cost )	257400	10,20,000	2550
Works Cost	686400	27,20,000	6800
Add : Office overheads (20% of Works cost)	137280	5,44,000	1360
Cost of Production	823680	32,64,000	8160
Add : Selling Expenses	10000	20,000	50
Cost of Sales	833680	32,84,000	8210
Profit (Bal. Fig)	366320	7,16,000	1790
Sales	1,20,000	40,00,000	10,000

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## 10.5 SUMMARY

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Cost is a resource sacrificed or forgone to achieve a specific objective. It is a monetary amount that is paid to acquire goods or services. Costing is the process of determining the cost of doing something. Cost is composed of three elements - materials, labour and expenses or overheads. Each of these costs can be further classified as (a) Direct (b) Indirect. Cost can also be classified on the basis of function, variability and elements. Cost sheet is a statement prepared to present the detailed cost of total output during a period. It provides information relating to cost per unit at different stages of the total cost of production. There are certain expenses which are not considered while preparing the cost sheet, such as Dividend, Income tax, Interest on loan, Donation paid, Capital expenditure, Writing off goodwill and Provisions. Prime Cost, Work Cost, Cost of Production and Cost of sales are the different elements of costs.

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## 10.6 BOOKS RECOMMENDED:

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Cost accounting & Costing methods – Wheldon

Cost Accounting –Jawahar Lal

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## 10.7 TERMINAL EXERCISES:

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1. What is cost? What are the different elements of costs?
2. Explain the significance of each of the following cost classifications:
  - a) Direct and indirect costs
  - b) Variable and fixed costs
  - c) Controllable and uncontrollable costs
3. What are the items of expenses which are excluded from cost sheet? Why?

4. The following information is supplied relating to an output for the year ended 31.12.2009.

Particulars	Rupees
Purchase of Raw materials	148000
Direct wages	132000
Rent & Rates	14000
Carriages inward	6000
<b>Stock on 1-1-2009</b>	
Raw materials	22000
Work in progress	18000
Finished goods	30000
<b>Stock on 31.12.2009</b>	
Raw materials	24000
Work in progress	35000
Finished goods	25000
Factory expenses	18000
Sales	420000

Selling and distribution costs amounted to 75 paise per unit sold. 25000 units were produced during the year. You are required to prepare cost sheet showing break –up of costs, total net profit and net profit per unit sold.

5. A factory produces a standard product. The following information is given to you from which you are required to prepare a cost sheet for January, 2009.

Direct materials consumed	Rs. 90,000
Direct Wages	Rs. 30,000
Other direct expenses	Rs. 10,000
Factory overheads – 80% of direct wages	
Office overheads – 10% of work cost	
Selling and distribution expenses Rs. 2 per unit sold.	

Units produced and sold during the month 10000. Find out the selling price per unit on the basis that Profit mark up is uniformly made to yield a profit of 20% of the selling price. There was no stock of work in progress at the beginning or at the end of the period.

6. A toy manufacturer earns an average net profit of Rs.3 per piece on a selling price of Rs.15 by producing and selling 60,000 pieces at 60 percent of the potential capacity. The composition of the cost of sales is :

Direct Materials	Rs. 4
Direct wages	Rs. 1
Work overhead	Rs. 6 (50 per cent fixed)
Sales Overhead	Rs. 1 (25 percent variable)

During the current year, he intends to produce the same number of pieces, but anticipates that-

- a) Fixed expenses will go up by 10 per cent.
- b) Direct labour will increase by 20 percent.
- c) Direct material cost will increase by 5 percent.
- d) Selling price will remain the same.

He obtains an order for a further 20 per cent of his capacity. What minimum price will you recommend for accepting an order to ensure the manufacturer an overall profit of Rs.183500?

7. The following particulars are extracted from the works and other relevant source in respect of a Ltd. Company?
- a) Estimated material cost of the job is Rs.25000 and the direct labour cost is likely to be Rs.5000
  - b) It will require machining by a German machine for 20 hours and a Japanese machine for 6 hours.

- c) The machine hour rates for the German and Japanese machines are Rs.100 and Rs.150 respectively.
- d) The direct wages in all other shops during the last year amounted to Rs.800000 as against Rs. 180000 of factory overhead.
- e) The factory cost of all other jobs amounted to Rs.375000 as against Rs.375000 of office expenses.

You are required to make a quotation with 20 per cent profit on selling price.

