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Foundations of Accounting and Finance Block III MANAGEMENT ACCOUNTING UNIT 7 Basic Cost Terms and Concepts 1-41 UNIT 8 Cost Analysis and Decision Making 42-95
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ICFAI Foundation for Higher Education (IFHE), Hyderabad. Ref. No. FAF SLM 102021B3 For any clarification regarding this book, the students may please write to The ICFAI Foundation for Higher Education (IFHE), Hyderabad specifying the unit and page number. While every possible care has been taken in type-setting and printing this book, The ICFAI Foundation for Higher Education (IFHE), Hyderabad welcomes suggestions from students for improvement in future editions. Our E-mail id: cwfeedback@icfaiuniversity.in Centre for Distance and Online Education (CDOE) The ICFAI Foundation for Higher Education (Deemed-to-be-University Under Section 3 of UGC Act, 1956) Donthanapally, Shankarapalli Road, Hyderabad- 501203.
iii BLOCK III MANAGEMENT ACCOUNTING This block discusses the basic cost terms and concepts of Management Accounting and provides an insight in to the Cost Analysis and Decision Making. The block consists of two units.
Unit 7 Basic Cost Terms and Concepts outlines the cost concepts and various types of costs, cost units and cost centers. It also deals with the relation between the cost behavior and cost estimation and the preparation of cost sheet. Unit 8 Cost Analysis and Decision Making outlines the costs involved in decision making and the use of techniques of marginal cost and differential cost analysis in various production decisions. It also deals with
the major considerations for fixation of selling price, different methods of pricing and the channels of distribution

in marketing decisions. The block units have been revised with updated exhibits and addition to content where necessary.

Unit 7 Basic Cost Terms and Concepts Structure 7.1 Introduction 7.2 Objectives 7.3 Types of Costs 7.4 Cost Units and Cost Centers 7.5 Characteristics of Cost Information 7.6 Costs for Financial Reporting Purposes 7.7 Cost Behaviour and Cost Estimation 7.8 Statement of Cost or Cost Sheet 7.9

Summary 7.10 Glossary 7.11 Self–Assessment Test 7.12 Suggested Readings/Reference Material 7.13 Answers to Check Your Progress Questions 7.1 Introduction

We were introduced to financial accounting, one of the branches of accounting, in the previous units. In this unit, we will look into another branch of accounting which is cost accounting. Cost accounting data, along with the data derived from financial statements is used by the management widely to arrive at decisions. Hence, in addition to the financial information, the management would also need information on cost data which is a crucial factor for decision- making. For example, a firm proposes to increase its output by 10%, is it reasonable to expect total cost to increase exactly by 10% or more or less than 10%? Such questions are concerned about cost concepts and basic cost behavior which can be available. Such cost data is available in the cost accounting records maintained by the business. In this unit, we will discuss the meaning of the terms cost, cost accounting and cost accountancy, and provide an overview of the different types of costs and various methods of costing. An insight into the concepts of cost unit and cost center, and a discussion on the characteristics of cost information for financial reporting purposes is also undertaken. We shall also derive the relation between cost behaviour and cost estimation and learn the preparation of statement of cost or cost sheet. 7.2 Objectives After reading through the unit, the student should be able to: ? Describe the meaning of cost, cost accounting and cost accountancy ? Explain different types of costs

Block III: Management Accounting 2 ? Differentiate between cost unit and cost center ? State the characteristics of cost information ? Identify the Costs for Financial Reporting Purposes ? Discuss the relation between cost behaviour and cost estimation; and ? Prepare a statement of cost or cost sheet from the given information 7.3 Types of Costs It is very difficult to define the term ‘cost’.

Cost accountants, economists and others define the concept of ‘cost’ according to their needs.

According to
the Oxford Dictionary, cost means “the price paid for something”.

The important definitions of costs are given below: According to CIMA (
Chartered
Institute of Management Accountants),
London
cost is, “
the
amount of expenditure (
actual or notional) incurred or attributable to a
given
thing”.

According to the
Committee on Cost Concepts and Standards of American Accounting Association, “
Cost
means economic sacrifice, measured in terms of standard monetary unit, incurred or potentially to be incurred, as a consequence of a business decision to achieve a specific objective”.

According to ICAI (Institute of Chartered Accountants of India), the term
cost can be used as a noun meaning
the
amount of expenditure (actual or notional) incurred on or attributable to
a
specific article ,product or
activity.

As a verb
it is used

to ascertain the cost of a specified thing or activity.
In order to understand the meaning of the term 'cost', it should be used with a modifier or an adjective according to the specific purpose of its use. The terms Costing, Cost Accounting and Cost Accountancy need to be interpreted to understand the concept of '
Cost' Concepts of Cost, Costing, Cost Accounting & Cost Accountancy ICAI defines the terms as follows:
Cost is "
the
amount of expenditure (actual or notional) incurred or attributable to a given
thing".
Costing
is "the technique and process of ascertaining costs".
Cost Accounting is
defined as the process of accounting for cost which begins with the recording of income and expenditure or the bases on which they are calculated and ends with the preparation of periodical statements and reports for ascertaining and controlling costs.
Cost
Accountancy has been defined
as "
the application of costing and cost accounting principles, methods and techniques to the
science, art and practice of cost control
and the ascertainment of profitability.
It includes the presentation of information
derived there from for the purposes of
managerial decision-making.
Unit 7 : Basic Cost Terms and Concepts 3
Objectives
of Cost Accounting The
objectives of Cost Accounting
are: (i) Ascertainment of Cost (
ii) Determination of Selling Price (
iii) Ascertaining the profit of each activity (
iv) Cost Control and Cost Reduction (v) Providing assistance to the management in decision-making Cost Classification
Cost
classification is the process of grouping costs according to their common characteristics.
A suitable classification of costs is very helpful in identifying a given
cost with cost centers or cost units. Costs may be classified according to their nature, i.e., material, labour and expenses and a number of other characteristics.
Depending upon the purpose to be achieved and requirements of a particular concern, the
same cost figures may be classified into different categories. Costs can be classified in the following ways: ?
By Nature or Element
or Analytical classification ? By Functions ? By Traceability ?
By Variability ? By Controllability ? By Normality ? By Capital or Revenue
or Financial Accounting Classification ? By Time ? By Identification as part of Inventory ? According to Planning and Control ? For Managerial Decisions ? Other Types of Costs Each classification will be discussed in detail in the following paragraphs:
By Nature or Element or Analytical Classification Under
this classification, costs are divided into three categories i.e., Materials, Labour and Overheads.
Each element can
undergo further sub-classification:
for example, material into raw material, components
and spare parts, consumable stores, packing material, etc.

Materials Materials are the principal substances that go into the production process and are transformed into finished goods. They are further classified as direct materials and indirect materials. Direct materials can be easily and directly identified and easily traced with the production of finished goods. The cost of
Block III: Management Accounting 4
direct materials generally comprises the major cost of the finished product. All the other materials that go into the production of the finished goods are called indirect material costs. They generally form a part of the manufacturing overheads. For example, for a furniture manufacturer, teak wood is direct material which goes into manufacturing the furniture, while items like the nails, adhesive and other sundry materials can be treated as indirect materials. Labour Labour is the human physical and mental effort that goes into the production of a product. It is further classified as direct and indirect labour. Direct labour is directly involved in the production of the product. Direct labour cost generally comprises major labour cost. The residual labour, which cannot be categorized as direct labour, is indirect labour. It forms a part of factory overheads. For example, continuing with the above example in a furniture manufacturing unit, the cost of the workers who directly expend their energy on the direct material with the help of tools and machines are considered as direct labour. The supervisor who is in charge of overseeing the work of say ten workers is considered as indirect labour.
Direct Expenses According to Cost Accounting standard (CAS10) issued by Cost Accounting Standards Board of ICWAI, direct expenses are expenses relating to manufacture of a product or rendering a service, which can be identified or linked with the cost object other than direct material cost and direct employee cost.
The direct material cost along with the direct labour cost and any other direct expenses are together called as Direct Costs as shown in Figure 7.1. Figure 7.1: Classification of Direct Costs Source: ICFAI Research Center
Overheads All other costs that are incurred by the company other than direct materials and direct labour are called overheads. Hence, overheads consist of indirect materials, indirect labour and other expenses (
refer to figure 7.2).
The overheads are
further sub-divided
into factory
overheads, office and administrative overheads and selling and distribution overheads.
Continuing with the above
Elements of Direct Cost Direct Material Cost Direct Labour Cost Direct Expenses
Unit 7 : Basic Cost Terms and Concepts 5
example, factory lighting, rent of factory, rent of administrative building, wages of administrative staff, managers, depreciation of machinery etc., constitute overheads.
Figure 7.2: Classification of Overheads Source: ICFAI Research Center
Indirect materials costs include costs incurred for tools, lubricants, etc. Indirect labour includes plant maintenance and cleaning labour. Indirect expenses can be plant rent, plant insurance, property taxes on the plant, depreciation on plant and equipment, and remuneration to plant managers, advertising, etc. By Functions Under this classification, costs are grouped
according to the broad divisions of functions of a business undertaking or basic managerial activities, i.
e., production, administration, selling and distribution. According to this classification, costs are divided as follows:
Manufacturing and Production
Costs Production costs include the total of
costs incurred in manufacture, construction and fabrication of units of production.
The manufacturing and production costs comprise direct materials, direct labour and factory overheads. Administrative Costs Administrative cost includes costs incurred in planning, directing, controlling and operating a company. For example, salaries paid to managers and other administrative staff. Selling and Distribution Costs Selling costs and distribution costs are more often confused to be the same type of costs. However, there is a distinction between the two.
Selling costs are
defined
as “
the cost of seeking to create and stimulate demand and of securing orders”.
Examples

of selling costs are: advertisement,
salesmen salaries etc. Distribution costs are
defined as "
the cost of sequence of operations
which begin with making the packed product available for dispatch and ends with
Overheads Indirect Material Cost Indirect Labour Cost Indirect Expenses
Block III: Management Accounting 6
making the reconditioned, returned empty packages, if any available for
re-use".
Examples
of distribution costs are insurance on goods-in-transit, warehousing etc. By Traceability
According to this classification, total cost is divided into
direct costs and indirect costs. Direct costs are incurred for and may be conveniently identified
or easily traceable
with a particular cost center or cost unit.
The common examples are
materials used and labour employed in manufacturing an article or in a particular process of production. Indirect
costs are incurred for the benefit of a number of cost centers or cost units and
cannot be conveniently identified with a particular cost center or cost
unit.
Examples include rent of building, management salaries, machinery depreciation, etc. The nature of the business and the cost unit chosen will determine
the
costs as direct and indirect. For example, the hire charges of a mobile crane used onsite by a contractor would be regarded as a direct cost
since it is identifiable with the project/site on which it is employed,
but if the crane is used as a part of the services of a factory, the hire charges would be regarded as indirect cost because they will probably benefit more than one cost
center or department. The distinction between
these two costs
is essential because the
direct costs of a
product or activity can be accurately
identified with the cost object while the indirect costs have to be apportioned on the basis of certain assumptions about their incidence. By Variability The basis for this classification is the behaviour of costs
in relation to changes in the level of activity or volume of production. On this basis, costs are classified into three groups viz. fixed, variable and
semi-variable.
For
a business organization, it is important to identify, track infer and allocate how the various costs change vis a vis volume at different output levels. The breakdown of these expenses determines the price level of the services and assists in many other aspects of the overall business strategy. Fixed
Costs
Fixed costs
remain fixed in total with increase or decrease in the volume of output or activity for a given period of time
or for a given range of output. Fixed costs per unit vary inversely with the volume of production, i.e.,
fixed cost per unit decreases as production increases and increases as production decreases.
Examples are rent, insurance of factory building, factory manager's salary, etc. These costs are constant in total amount but fluctuate per unit as production
level changes. They are also termed as capacity costs.
It is important to note

that fixed costs are not constant in the long run. For example, rent will be the same till the business occupies the space or till the
Unit 7 : Basic Cost Terms and Concepts 7
landlord decides to increase the rent after the
end of the lease agreement. If the owner decides to move to a bigger facility or pay more, the business expense would obviously go up.
It must be remembered that fixed costs remain constant only with in a particular range. Once that range is crossed the costs rise steeply and remain constant within the next range.
Variable
Costs Variable costs
vary in total directly in proportion to the volume of output.
These costs per unit remain relatively constant with changes in
volume of production or activity.
Thus, variable costs fluctuate in total amount but tend to remain constant per unit as production level changes. Examples are direct material costs, direct labour costs, power, repairs, etc.
We can apply the following
formula for calculating total variable cost:
Total Variable Cost = Total Quantity of Output x Variable Cost Per Unit
of Output
Semi-Variable Costs Semi-variable costs are partly fixed and partly variable. In this type of cost, a base-level fixed cost will be always be incurred, irrespective of volume, as well as an additional variable cost based only on volume will be incurred. A factory may incur ₹ 10000 labor cost per day to maintain minimum level of production. But due to new order received, production volume is exceeding the minimal level and hence production staff work overtime. Thus, the basic ₹ 10,000 daily cost will be incurred at all volume levels, and is therefore the fixed element of the semi-variable cost, while overtime varies with production volume, and so is the variable element of the cost.
For example, telephone expenses include a fixed portion of monthly charge plus variable charge according to
the number of
calls made; thus total telephone expenses are semi-variable. Other examples of such costs are: depreciation, repairs and maintenance of building and plant, etc.
These are also called semi-fixed costs or mixed costs. As the level of usage of a semi-variable cost item increases, the fixed component of the cost will not change, while the variable component will increase. The formula for this relationship is:
Y = a + bx Y = Total cost a = Total fixed cost b = Variable cost per unit of activity x = Number of units of activity
Block III: Management Accounting 8
By Controllability
On the basis
of controllability, costs are classified into two categories viz., controllable costs, and uncontrollable costs.
Controllable Costs
If
the costs
are
influenced by the action of a specified member of an
undertaking,
that is
to say, costs, which are at least partly within the control of management,
they are called controllable costs.
An organization is divided into a number of responsibility centers, and controllable costs incurred in a particular cost center can be influenced by the action of the manager responsible for the center. Generally speaking, all direct costs including direct material, direct labour and some of the overhead expenses are controllable by lower
level of management.
Uncontrollable Costs

If the costs cannot be influenced by the action of a specified member of an undertaking, that is to say, costs which are not within the control of management are called uncontrollable costs.

Most of the fixed costs are uncontrollable. For example, rent of the building is not controllable and so are managerial salaries. Overhead cost, which is incurred by one service section or department and is apportioned to another, which receives the service, is also not controllable by the latter.

Controllability of costs depends on the level of management (top, middle or lower) and the period of time (long-term or short-term). By Normality On the basis of normality, the costs are classified into two categories viz., normal cost, and abnormal cost.

Normal Cost It is the cost which is normally incurred at a given level of output in conditions which are favourable for that level of output.

Normal Costs are the normal or regular costs which are incurred in the normal conditions during the normal operations of the organization. They are the sum of actual direct materials cost, actual labour cost and other direct expense. Example: repairs, maintenance, salaries paid to employees. This cost forms the cost of production of a product.

Abnormal Cost It is the cost, which is normally incurred at a given level of output in conditions which are not favourable for that level of output. It is not considered as a part of cost of production and charged to Costing Profit and Loss Account.

Example: destruction due to fire, shut down of machinery, lock outs, etc.

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By Capital and Revenue or Financial Accounting Classification According to financial accounting terminology, costs are of two types viz., capital costs and revenue costs. Capital Cost If the cost is incurred in purchasing assets either to earn income or increase the earning capacity of the business, it is called capital cost. For example: the cost of a rolling machine in a steel plant. Though the

cost is incurred at one point of time, the benefits accruing from it are spread over a number of accounting years.
Revenue
Cost
Revenue expenditure is any expenditure incurred
to maintain the earning capacity of the concern such as cost of maintaining an asset or running a business. For example, cost of materials used in production, labour charges paid to convert the material into production, salaries, depreciation, repairs and maintenance charges, selling and distribution charges, etc.
While calculating revenue
cost, only
revenue items are considered whereas capital items are completely ignored. By Time Costs
can be classified as (i) Historical costs, and (ii) Predetermined costs. Historical
Costs The costs,
which
are
ascertained after
being incurred, are
called historical costs. Such costs are available only when a particular item has already been produced. Such costs are only of historical value and not at all helpful for cost control purposes.
Predetermined Costs Such costs are estimated costs, i.e., computed
prior to
production taking into consideration the previous periods' costs and the factors affecting such costs.
If they are determined on scientific basis they become
standard cost. Such costs when compared with actual costs will give the
variances and
reasons of variance and will help the management to fix the responsibility and
to take remedial action to avoid its recurrence in future. Historical costs and predetermined costs are not mutually exclusive.
Even in a system when historical costs are used, predetermined costs have a very important role to play because a figure of historical cost by itself has no meaning unless it is related to some other standard figure to give meaningful information to the management.
Block III:
Management Accounting 10 By Identification as Part of Inventory Costs on this basis are classified as product costs and period costs. This distinction is required for the purpose of profit determination. This is because product costs are carried forward to the next accounting period in the form
of unsold finished stock, whereas period costs are written off in the accounting period in which
they are incurred. Product Cost Product costs are associated with the unit of output. They are 'absorbed by' or 'attached to' the units produced. They go into the determination of inventory valuation (finished goods and partly completed goods) hence are also called inventoriable costs. They consist of direct materials, direct labour and factory overheads (partly or fully). The extent of inclusion of factory overheads depends on the type of costing system in force – absorption and direct costing. Where the absorption costing method is adopted, factory overheads both fixed and variable content are included as part of product cost. Where the direct costing method is adopted only variable factory overheads are included as part of inventoriable cost. Period Costs Period costs are costs associated with time period rather than the unit of output or manufacturing activity. These costs are not treated as part of inventory and hence are treated as expenses in
the period in which they are incurred. Administrative,
Selling and Distribution costs are treated as period costs
and are
deducted as an expense for the determination of income and are not regarded as a part of inventory cost.
According
to Planning and Control Cost accounting furnishes information to the management which is helpful in discharging the two important functions of management i.e., planning and control. For the purpose of planning and control, costs are

classified as budgeted costs and
standard
costs.
Budgeted Costs Budgeted costs represent an estimate of expenditure for different phases
or segments
of business operations, such as manufacturing, administration, sales, research and development, for a period of time in future which subsequently becomes the written expression of managerial targets to be achieved. Various budgets are prepared for different phases/
segments of business, such as sales budget,
raw material cost budget, labour cost budget, cost of production budget, manufacturing overhead budget, office and administration overhead budget
etc.
Continuous comparison of actual performance (i.e., actual cost) with that of the budgeted cost is made so as to report the variations from the budgeted cost to the management for corrective action.
Unit 7 : Basic Cost Terms and Concepts 11
Standard Costs
The Institute of Cost and Management Accountants, London defines standard cost as, "the
predetermined cost
based on a
technical estimate for materials, labour and overhead for a selected period of time and for a prescribed set of working conditions".
Thus, standard cost is a determination, in advance of production, of what should be its cost
under a set of
conditions. Differences between Budgeted Costs and Standard Costs
Budgeted costs and standard costs are similar to each other to the extent that both of them represent estimates
of
cost for a period of time in future. In spite of this, they differ in the following respects: ? Standard costs are scientifically predetermined costs
for
every aspect of business activity whereas budgeted costs are mere estimates made on the basis of past actual financial accounting data adjusted to future trends. Thus, budgeted costs are projection of financial accounts whereas standard costs are projection of cost accounts. ?
The
term
standard cost refers to a specific cost per unit. Budgeted cost refers to costs in total given a certain level of activity ?
A standard costing system can operate without any comprehensive budgeting system. But budgets in absence of standard costs will only be fair estimates and cannot provide a reasonable base against which the actual results can be compared. ? Review and revision of budgets is more frequently based on the changing circumstances than those of standard costs. Standard costs are more static and subject to less change. ?
The primary emphasis of budgeted costs is on the planning function of management whereas the main thrust of standard costs is on
cost control. ?
Budgeted costs are extensive whereas standard costs are intensive in their application. Budgeted costs represent a macro approach of business operations because they are estimated in respect of the operations of a department. Contrary to this, standard costs are concerned with
cost controlling in the business operations of each
department.
Budgeted costs are calculated for different functions of the business, i.e., production, sales, purchases, etc., whereas standard costs are compiled for each element of cost, i.e., material, labour and overheads. For Managerial Decisions On this basis, costs may be classified into the following categories: Marginal Cost It is the
additional cost incurred if an additional unit is produced.

It is derived from the variable cost of production, given that fixed costs do not change as
Block III: Management Accounting 12
output changes, hence no additional fixed cost is incurred in producing another unit of a good or service once production has already started.
In other words,
marginal cost
is the total of variable costs, i.e., prime cost plus variable overheads.
It
is based on the distinction between fixed and variable costs.
Calculating the marginal cost helps a business determine the point at which increasing the number of items produced will push the average
cost up.
Out-of-Pocket Costs It is that portion of the
cost which involves payment, i.e., gives rise to cash expenditure as opposed to such costs as depreciation, which do not involve any cash expenditure. Such
costs
are relevant for price fixation during recession or when 'make or buy' decision
is to be made. Differential Costs
If there
is a

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change in costs due to change in the level of activity or pattern or method of production they are known as differential costs. If the change increases the cost, it will be called incremental cost

and if
the change
results in the decrease in cost it is known as decremental cost.

94% **MATCHING BLOCK 2/35** **W**

The concept is used when there are multiple possible options to pursue, and a choice must be made to select one option and drop the others. The concept can be particularly useful in step costing situations, where producing one additional unit of output may require a substantial additional cost. Here are two examples: Example of alternative decisions. If you have a decision to run a fully automated operation that produces 100,000 widgets per year at a cost of Rs1,200,000, or of using direct labor to manually produce the same number of widgets for Rs1,400,000, then the differential cost between the two alternatives is Rs200,000. Example of change in output. A work center can produce 10,000 widgets for Rs29,000 or 15,000 widgets for Rs40,000. The differential cost of the additional 5,000 widgets is

Rs11,000.
Sunk Costs Sunk cost is another name for historical cost. It is a cost that has already been incurred and is irrelevant to the decision-making process. A good example is, depreciation on a fixed asset because the cost (of purchasing the asset) has already been incurred (when it was purchased) and it cannot be affected by any future action. Though we allocate the depreciation cost to future periods the original cost of the asset is unavoidable. What is relevant in this context
is the salvage value of the asset, not the depreciation. Thus, sunk costs are not relevant for decision- making and are not affected by increase or decrease in volume. Imputed (Or Notional) Costs These costs appear in cost accounts only. For example: notional rent charged on business premises owned by the proprietor, interest on capital for which no
Unit 7 : Basic Cost Terms and Concepts 13
interest has been paid.

When alternative capital investment projects are being evaluated it is necessary to consider the imputed interest on capital before a decision is arrived as to which is the most profitable project. Opportunity Cost It is the maximum possible alternative earnings that
will be foregone if the productive capacity or services are put to some
other use.
For example, if an owned building is proposed to be used for a project, the
likely
rent of the building
is the opportunity cost which should be taken into consideration while evaluating the profitability of the project. Since, opportunity costs are not the actual costs incurred but only the benefits foregone,
they are not recorded in the accounting books. However, they are relevant costs
for decision-making purposes and are considered while evaluating different alternatives.
Replacement Cost It is the cost at which there could be
purchase of
an asset or material identical to that which is being replaced or revalued. It is the cost of replacement at current market price. Avoidable and Unavoidable Costs Avoidable costs can be eliminated if a particular product or department, with which they are directly related
to,
is discontinued. For example, salary of the clerks employed in a particular department can be eliminated, if the department is discontinued. Unavoidable cost will not be eliminated with the discontinuation of a product or department. For example, salary of factory manager or factory rent cannot be eliminated even if
the production of a product is discontinued. Other Types of Costs
Future Costs These
costs are expected to be incurred at a later date. Programmed
Costs
Certain decisions reflect the policies of the top management which result in periodic appropriations and are referred to as programmed
costs. For example, the expenditure incurred by a company for employee training and development
is a programmed cost which reflects the policy of the top management.
Joint
Costs It
is the cost of manufacturing joint products up to or prior to the split-off point. Cost incurred after the split-off point is called separable cost. Joint cost is common to the processing of joint products and by-products till the point of separation and cannot be traced to a particular product before the point of split-off.
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Conversion Costs It
is the cost incurred on converting the raw material into finished product. It can be calculated by deducting the cost of direct materials from the production cost
or it is the sum of direct labour and factory overheads. Discretionary Costs These costs do not have any obvious relationship with the
levels of capacity or output activity and are determined as
a
part of the periodic planning process. In each planning period, the management decides on how much to spend on certain discretionary items such as advertising, research and development, employee training. These costs are amenable to alteration by the management. Committed Costs It is a fixed cost, which results from the decisions of the management in the prior period and is not subject to the management control in the present on a short run basis.
It arises from the possession of production facilities, equipment, organization
set-up etc. Some examples of committed costs are: plant and equipment depreciation, taxes, insurance premium and rent charges.
It is important to note that there are a variety of ways in which cost accounting information can be classified and there is no single best classification method. Classification depends on the purpose for which the information is to be used.

For example, costs may be classified for each of the three broad categories as shown in Table 7.1: Table 7.1: Classification of Costs based on Cost Categories Cost Categories Possible Methods of Cost Classification 1. Costs for Stock Valuation Period and Product Costs Elements of Manufacturing Costs Job and Process Costs 2. Costs for Decision-making Cost Behaviour Relevant and Irrelevant Costs Avoidable and Unavoidable Costs Sunk Costs Opportunity Costs Marginal and Incremental Costs 3. Costs for Control Controllable and Uncontrollable Costs Cost Behaviour Source: ICFAI Research Center

Unit 7 : Basic Cost Terms and Concepts 15

Check Your Progress – 1 1. Which of the following is not a criterion for classification of cost? a. Time b. Identifiability c. Variability d. Nature of business e. Nature of element 2. Which of the following is not a functional classification of cost? a. Manufacturing costs b. Standard costs c. Selling costs d. Distribution costs e. Administration costs 3. Which of the following statements

is not true with regard to budgeted costs and standard costs? a. Budgeted costs are expected costs b. Standard costs are desired costs c. Budgeted costs facilitate planning d. Standard costs facilitate control e. Standard costing is merely an arithmetic exercise 4. Sunk costs are a. Relevant in decision-making b. Cost of goods destroyed by flood c. Irrelevant in decision-making d. The same as imputed costs e. Those which change across alternatives 5. A

cost which is

normally incurred at a given level of output

in conditions which

are not favourable for that level of output is called: a. Normal Cost b. Abnormal Cost c. Marginal Cost d. Sunk Cost e. Avoidable Cost

Block III: Management Accounting 16 Activity 7.1 Classify the following costs on the basis of functions: Excise Duty, Royalty,

Hire of special equipment obtained for a contract, Cost of

rectifying defective work, Insurance premium paid, Canteen and welfare expenses, Cost of training new employees. 7.3.1 Techniques of Costing For ascertaining the cost, the following types of costing techniques are used. These techniques are: ? Absorption Costing: Under this type of

costing, all costs, both variable and fixed are charged to operations, processes

or products. This differs from marginal costing where fixed costs are excluded. ? Direct Costing: All direct

costs

are charged

to operations, processes or products leaving all indirect costs to be written off against profits in which they arise. ? Historical Costing:

It is the ascertainment of costs after they have been incurred. This type of costing has limited utility. ? Marginal Costing: It is defined as

the ascertainment of marginal cost by differentiating between fixed and variable costs.

It is used to ascertain effects of changes in volume

of type of output on profit. ? Standard Costing: This is a technique of cost ascertainment and cost control. The standard costs are predetermined and subsequently compared with the recorded actual costs. This technique may be used in conjunction with any method of costing. Predominantly used in the manufacturing sector, wherein the production of standardized goods is a routine activity. The techniques of costing help in cost analysis and are the basis for cost control and cost reduction. They help in decision-making. 7.3.2 Methods of Costing The methods of costing are different kinds of accounting of cost data. It is industry and activity specific. Different industries use different methods of costing and hence the method of costing is derived from the nature of their work. Various methods are as under: ? Batch Costing: Each batch is treated as unit of cost and thus separately costed.

The

cost per

unit

is determined by dividing the cost of the batch by the number of units

produced

in

the

batch.
Unit 7 :
Basic Cost Terms and Concepts 17 ?
Contract Costing:
The cost of each contract is ascertained separately. This is suitable for enterprises engaged in construction activity especially Roads, Highways, Bridges, Dams etc. ? Job Costing: Each job is considered as an independent task. Hence, the cost of each batch with certain specifications is manufactured in units and the costing is for the said job. ? Multiple Costing: It is combination of two or more methods being used. Eg: Manufacturing of parts of cycle are accounted using Job Costing and the assembling task is accounted by Single/ Output Costing method. ? Operating Costing: This method is used by enterprises engaged in rendering services such as transport, supply of water, electricity, retail trade etc. ? Process Costing: This method is used in mechanical operations, wherein, the cost of each operation/ process may be accounted separately. ? Single/Output Costing: This method of costing is used wherein, the product being manufactured is only one single product. Eg: Bricks. 7.4 Cost Units and Cost Centers Once the various types of costs that appear in an organization are identified and classified, the next step would be assign the costs. Costs are usually identified and assigned based on a unit of product, service or time. Such a unit of product, service, activity etc is termed as cost unit. Costs are also accumulated on the basis of their place of occurrence into cost centers. Understanding the concept of cost units and cost center not only helps in identifying costs but also in their control. Cost Units Managers are often interested in knowing the cost of something. The 'something' for which the cost has to be ascertained is known as cost objective or cost object or cost unit. Examples of cost units include, products, activities, departments, number of patients treated, sales regions, etc. For example, if a factory produces motor cars then the cost unit would be
a
motor car because the costs are all incurred in producing
motor cars. Let us take up a more complex situation. Consider a bus operator providing bus services to the public between most of the major cities of the country. Suppose the bus operator wants to fix a cost unit, what would it be?
Note that here there is no production, what is provided is a service. Each trip between two cities may be taken as a cost unit. Alternatively cost per kilometer of travel may be taken as a cost unit. However, neither of the above cost units relate to the passenger who buys the service. If the operator wants to fix a price to be charged to each passenger, the above cost units would have to be adjusted further.
Block III: Management Accounting 18
Assume that a bus covers a distance of 700 km per day carrying 30 passengers on an average. The output is 700 x 30 = 21,000 passenger kilometers per day. On an average the passenger kilometers covered by each bus per week is 1,00,000. The total cost of operation per bus per week is ` 80,000, and the cost per passenger kilometer is = ` 0.80 Cost per passenger kilometer = = ` 0.80 The implication is that the bus operator must charge, on an average, over ` 0.80 per kilometer to each passenger in order to make a profit.
Exhibit 7.1 discusses the difference between cost object and cost unit. Exhibit 7.1: Cost
Object vs. Cost Unit Most often the terms cost object and cost unit are used interchangeably. A cost object is any activity for which a separate measurement of costs is desired. The cost of rendering service to a bank customer or a patient or the costs of a product are a few such examples. Few accountants however, prefer to treat cost object as a broader concept and cost unit as lower level concept.
A
cost unit is a quantitative unit of product or service for which costs are ascertained.
For example, in an university, the cost of educating a student is treated as a cost object and the cost unit can be the cost per student, or cost per student per program etc. Source: ICFAI Research Center
Cost Centers
The smallest
segment of activity or area of responsibility for which costs are accumulated
is designated as a cost center.

In the manufacture and sale of a product or in the rendering of a service, several activities may have to be performed. These activities are usually carried out by different departments or sections of the company. For example, in a pharmaceutical company, the raw materials may be purchased by a purchase department, stocked up in a store, processed in one or more processing departments, packed in a packing department and sold by a sales and distribution department. Hence, cost statistics are conveniently accumulated for each department. In Cost Accounting each department would be called a Cost Center. Typically cost centers are departments, but in some
instances,
a department may contain several cost centers. For example, a machine department may be under one foreman but it may contain various groups of machines, such as lathes, milling machines, etc. As each department is managed by a departmental manager, the cost of a department would be a measure of how the department's manager is performing. In fact, by reporting departmental costs to the concerned
managers, they will better understand the cost consequences of their actions so that departmental performance becomes more cost effective.
Unit 7 : Basic Cost Terms and Concepts 19
Exhibit 7.2 gives an example of Amazon Web Services, a cloud based platform that helps organizations with easier cost center creation and monitoring.
Exhibit 7.2: Cost Center Categorization using Amazon Web Services Amazon Web Services (AWS) is a cloud based platform that offers a range of cloud based web services. One of the services it offers is cost management solutions. The cost management solutions of AWS include deriving cost and usage data reports, customizing cost budgets to track your costs and usage, cost anomaly detection and cost categorization. The cost categorization feature enables grouping of costs into meaningful categories and centers. This grouping is mapped with the internal organization structure and given a name such as Cost center 1, 2 etc. The cost and usage report that is generated on a monthly basis reports the data based on these cost centers. There are several other features such as splitting the costs between the centers which are shown as "shared costs", defining rules for each cost center or group, creating multilevel hierarchies etc. The major advantage of such grouping is that costs can traced to these centers easily and also helps in anomaly detection
Source: https://aws.amazon.com/aws-cost-management/aws-
cost-categories/, 2021 7.5
Characteristics of Cost Information Cost accounting provides information that helps in
planning, controlling and decision-making. ? Planning is future-oriented. Hence, cost information generated from historical records has to be attuned to future changes in the organization and its environment. ? Analysis and comparison of the actual and expected results indicate whether there is any need for control. Hence, costs have to be broken down into various elements and each element of cost has to be compared with a "norm" or "standard". ? Decision-making is a future oriented activity because the impact of current decisions
is
experienced in terms of future costs and benefits. Decision-making considers only relevant costs. A cost that remains the same regardless of the alternative chosen is not a relevant cost.
But a cost that changes depending upon the alternative chosen is a relevant cost. ? Cost data is gathered from the information about the operations to determine the costs, which are related to each cost center. The financial accounting system provides the data on expenses, and these are now treated as costs. ? General or common costs like depreciation on factory building have to be distributed among the various cost centers on an equitable basis. ? The costs accumulated in each cost center are then "loaded" or distributed over the cost units produced by them.
Block III: Management Accounting 20 7.5.1
Cost Tracing Tracing of costs is an attempt to assign costs on the basis of their cause. The cost which can be traced directly to a specific cost objective is direct cost with respect to that cost objective and the cost which cannot be traced directly to a specific cost objective is indirect cost with respect to that cost objective. Tracing of costs is essential for two primary reasons: cost control and product costing. 7.5.2
Cost Allocation Many costs are incurred in an organization as a result of activities performed in several responsibility centers or subunits of the organization. A collection of costs to be assigned to different subunits is called a cost pool. The responsibility centers, products or services to which costs are to be assigned are called cost objects. The process of assigning the costs in the cost pool to the cost objects is called cost allocation or cost distribution. 7.5.3 Cost

Driver A cost driver is an output measure that causes costs. For this reason it is necessary for an organization or its subunit to find out its activities and determine measures of output for each of the activities identified. Once an output measure for each of the activities is determined, it is possible to relate each output measure to the resources that are necessary to produce it. Examples of output measures include number of letters dispatched by a dispatch clerk, passenger kilometers operated by a transport company, tonnes of coal produced by a coal mining company, meals served by a hotelier etc. 7.6 Costs for Financial Reporting Purposes
Generally Accepted Accounting Principles (GAAP) determines how costs are to be classified for financial reporting. The
financial statements are for users outside the organization and the rules underlying the classification of costs for reporting in financial statements are not likely to be used for internal decision- making. The main problem in financial reporting is determining when costs become expensed in the income statement. The calculation of the cost of a product for planning and cost control purposes may be different from the calculation of the cost of a product for financial reporting purposes. Product costs are identified with goods manufactured or purchased for resale. Product
costs
on financial statements include all manufacturing costs, i.e., direct material, direct labour and overheads. Period costs are identified with a time period rather than a product – selling, administration and interest costs are treated as period costs for presenting in financial statements.
When costs are being used as part of financial accounting, they are to be audited. This led to the concept of cost audit.
Unit 7 : Basic Cost Terms and Concepts 21 7.6.1
Concept of Cost Audit “Cost Audit” is defined by
the Institute of Cost and Management Accountants of England as “
the
verification of cost accounts and a check on the adherence to the Cost
Accounting Plan.”
Cost
Audit, apart from having all the normal ingredients of audit, i.e., vouching, verification etc., has within its domain elements of efficiency audit and propriety audit as well. i. Efficiency Audit: It is directed towards the measurement if whether corporate plans have been effectively executed. ii. Propriety Audit: It is concerned with the executive actions and plans bearing on the finances and expenditure of the company. 7.6.2 Purposes of Cost Audit a. Protective purpose of Cost Audit: To examine that there is no undue wastage or losses and the costing system brings out the correct and realistic cost of production or processing. b. Constructive purpose of Cost Audit: Useful in regulating Production, choosing economical methods of operation, reducing operation costs
etc. Types of Cost Audit: a. Cost Audit on behalf of the management b. Cost Audit on behalf of the customer c. Cost Audit on behalf of the government d. Cost Audit by trade associations e. Statutory Cost Audit 7.7 Cost Behaviour and Cost Estimation Understanding an organization’s cost behaviour enables managers to anticipate changes in cost when the organization’s level of activity changes. Cost predictions, which are based on cost behaviour patterns, facilitate planning, control, and decision-making throughout the organization. These cost predictions are valid for a range of activities known as relevant range. Relevant range is the range of activity for which the fixed costs remain the same. A variety of cost behaviour patterns exist, ranging from simple variable and fixed costs to more complicated semi-variable and curvilinear costs. Several cost estimation methods are used to determine which cost behaviour pattern is appropriate for a particular cost. As in selecting any managerial accounting technique, the choice of a cost estimation method involves a trade-off of costs and benefits. More accurate estimation methods provide the benefits of better information, but they are often more costly to apply.
Block III: Management Accounting 22 7.8
Statement of Cost or Cost Sheet The companies which have their production or manufacturing units along with office premises and also carry out sales and distribution of goods, require a systematic cost accounting procedure to determine the cost, profit and sales price. They prepare Cost sheet.
Cost Sheet is a statement, which provides for assembly and depiction of the detailed cost in respect of cost

centers and cost units. Data is collected from various sources to incorporate in the cost sheet. Cost sheet is only a statement. It is not a part of double entry cost accounting records. The cost sheet of a business organization provides an insight into its performance and efficiency. It helps in competitive analysis and improvement of the business operations through cost reduction. According to ICMA, London, 'the
cost sheet
is
a statement which provides for the assembly of the detailed cost of a cost center or
a cost unit'.
There is
no specific format for preparing a cost sheet. Generally,
it is presented in a columnar form as shown in Table 7.2 below.
The columns are for the total cost and per unit cost of current period and previous period. Sometimes budgeted total cost and per unit column are also incorporated in cost sheet. If the cost sheet is presented in the ledger account format, then it is called 'Production Account'.
Table 7.2:
Proforma of
Cost Sheet

93% **MATCHING BLOCK 3/35** **W**

Particulars Total Cost (`) Cost per unit (`) Direct Materials Direct Labour Direct Expenses Prime Cost Add: Works Overheads Works Cost Add: Administration Overheads Cost of Production Add: Selling and Distribution Overheads Total Cost or Cost of Sales

Profit
Sales
Treatment of Stock Stock may be raw material, work-in-progress and finished goods. These are to be adjusted in the cost sheet. Stock of Raw Materials If the opening, closing and purchase of raw materials are given, then the material consumed can be determined in the following way:
Unit 7 : Basic Cost Terms and Concepts 23 Particulars `

85% **MATCHING BLOCK 14/35** **SA** Unit 2.docx (D110981204)

Opening Stock of Raw Materials xxx Add: Purchases of Raw Materials xxx xxx Less: Closing Stock of Raw Materials xxx

Cost of Raw Material Consumed
xxx
Stock of Work-in-Progress
Semi-finished or uncompleted units are known as work-in-progress. Generally, it is valued at works cost. Opening and Closing stock
of work-in-progress is adjusted in the following way:
Particulars ` Prime Cost xxx Add: Factory Overheads

88% **MATCHING BLOCK 5/35** **W**

xxx xxx Add: Opening Stock of Work-in-Progress xxx xxx Less: Closing Stock of Work-in-Progress xxx Factory or Manufacturing or Works Cost xxx

Stock of Finished Goods
Opening and closing stock of finished goods are
adjusted in the following way before calculating the cost of goods sold:

Particulars `
Works
Cost
xxx Add: Administration
Overheads xxx
Cost of Production xxx
Add: Opening Stock of Finished Goods xxx
xxx Less: Closing Stock of
Finished Goods
xxx Cost of
Goods
Sold
xxx
Treatment of Scrap As per Cost Accounting standard (CAS 24) issued by Cost Accounting standard board India the word scrap is defined as discarded material having no or insignificant value and which is usually either disposed off without further treatment (other than reclamation and handling) or reintroduced into the process in place of raw material. Scrap may be defined as an unavoidable residue material arising in certain types of manufacturing processes. Generally, it has small realizable value. It
is deducted either from factory overheads, or factory cost while preparing cost sheet.
Block III: Management Accounting 24
Items Excluded from Cost The following items are not included while preparing a cost sheet:
a. Interest Paid
b. Dividends Paid c. Transfer to Reserves d. Donations Paid e. Preliminary Expenses Written Off f. Goodwill Written Off g. Cash Discount Paid h. Provision for Taxation i. Provision for Income Tax j. Profit/loss on Sale of Fixed Assets etc.
The proforma of the Comprehensive Cost Sheet, i.e., with stocks, is shown under Exhibit 7.3:
Exhibit 7.3: Proforma of Comprehensive Cost Sheet
Opening Stock Raw Materials Add: Purchases (including Carriage Inwards, Transit Insurance etc.)
Less:
Closing Stock of Raw Materials Direct Materials Consumed Add: Direct Labour Direct Expenses Prime Cost
Add: Factory
Overheads (
Works
OH / Manufacturing OH / Production OH)
Add:
Opening Stock of Work in Progress Less: Closing Stock of
Work
in Progress
Factory
Cost /
Work
Cost
Add:
Administration
Overheads
Cost of Production
Add: Opening Stock of Finished Goods Less: Closing Stock of Finished Goods
Cost of Goods
Sold
Add: Selling and Distribution
Overheads
Cost of Sales

Add: Profit/
Loss (Balancing Figure) Sales
Source: Adapted from Ravi M .Kishore, "Cost & Management Accounting", Taxmann Publications 2018 edition
Unit 7 : Basic Cost Terms and Concepts 25
Illustration 7.1

82% **MATCHING BLOCK 6/35** W

Following information has been obtained from the records of a manufacturing company: Particulars 1-1-20xx 31-12-20 xx ` ` Stock of Raw Materials 50,000 60,000 Stock of Finished Goods 1,00,000 1,50,000 Stock of Work-in-Progress 13,000 16,000

Transactions during the year: Particulars ` Particulars ` Indirect Labour 60,000 Carriage Outward 20,000

94% **MATCHING BLOCK 7/35** W

Lubricants 12,000 Power 20,000 Insurance on Plant 4,000 Direct Labour 2,00,000 Purchase of Raw Materials 3,00,000 Depreciation on Machinery 40,000 Sales Commission 72,000 Factory Rent 50,000 Salaries of Salesmen 90,000 Property Tax on Factory Building 14,000

Administration Expenses 1,50,000
Sales 10,11,000
Prepare a statement of cost and profit
showing: (a)
Cost of Raw Materials Consumed, (b) Prime Cost (c) Total Manufacturing Cost, (d) Factory Manufacturing Cost, (e)
Cost of Production, (f) Cost of
Goods Sold, (g) Cost of Sales, and (
h) Profit.
Solution Statement of Cost and Profit
for the year ended 31-12-20xx Particulars ` `

85% **MATCHING BLOCK 8/35** W

Opening Stock of Raw Materials 50,000 Add: Purchase of Raw Materials 3,00,000 3,50,000 Less: Closing Stock of Raw Materials 60,000 Cost of Raw Materials Consumed 2,90,000 Direct Labour 2,00,000 Prime Cost 4,90,000 Factory Overheads: (

Assuming all are Indirect Expenses) – Indirect Labour 60,000 – Lubricants 12,000 – Insurance on Plant 4,000
Block III: Management Accounting 26 Particulars ` ` – Power 20,000 – Depreciation on Machinery 40,000 – Factory Rent 50,000 – Property Tax on
Factory Building 14,000 2,00,000 6,90,000

59% **MATCHING BLOCK 9/35** W

Add: Opening Work-in-Progress 13,000 7,03,000 Less: Closing Work-in-Progress 16,000 Factory (Manufacturing) Cost 6,87,000 Add: Administration Expenses 1,50,000 Cost of Production 8,37,000 Add: Opening Stock of Finished Goods 1,00,000 Cost of Goods Available for Sale 9,37,000 Less: Closing Stock of Finished Goods 1,50,000 Cost of Goods Sold 7,87,000 Sales Commission 72,000 Salaries of Salesmen 90,000 Carriage Outward 20,000 1,82,000 Cost of Sales 9,69,000 Profit 42,000 Sales 10,11,000

Illustration 7.2 The
following particulars are extracted from the books of a
company relating to commodity Alpha for the half-year ending 30th June 20
xx.
Particulars `

xx Raw materials 25,000 Finished products (3,200 tonnes) 37,600 Work-in-progress
on 1-1-20xx 4,500 Work-in-progress on 30-6-20xx 16,000 Factory supervision 10,000 Sales 3,00,000
Unit 7 : Basic Cost Terms and Concepts 27
Advertising discount allowed
and selling cost is
at ` .0.50 per tonne sold. 25,000 tonnes of commodity was sold during the
period. You are required to ascertain: i. Prime Cost ii. Factory Cost iii. Cost of Sales iv. Profit v. No. of tonnes of the commodity produced
Solution Cost Sheet of Commodity Alpha

and works
on cost (Assumed Indirect) 45,000

Re.0.50 per .....tonnes on 25,000 tonnes 12,500 Cost of sales 2,62,500 Profit 37,500 Sales 3,00,000
Block III: Management Accounting 28 Statement showing the goods produced during the period: Particulars Tonnes

Goods
produced 26,600 Illustration 7.3
The books and records of the Sony Manufacturing Company present the following data for the month of August, 20
xx:

100% **MATCHING BLOCK 15/35** **SA** Cost Accounting Unit ! for checking.docx (D67919053)

Direct labour cost ` 25,000 (165% of factory overhead) Cost of goods sold ` 76,000 Inventory accounts showed these opening and closing

balances: (
Amount in ` ) Particulars August 1 st August 31st Raw materials 12,000 12,600 Work-in-progress 11,000 16,000 Finished goods 17,000 21,000 Other data: (Amount in `) Particulars `

83% **MATCHING BLOCK 23/35** **SA** Cost Accounting Unit ! for checking.docx (D67919053)

Selling expenses 3,400 General and administration expenses 4,600 Sales for the month 1,50,000 You are required to prepare statement showing cost of goods manufactured and sold and profit earned. Solution Statement of Cost

and Profit Particulars `

100% **MATCHING BLOCK 16/35** **W**

Opening Stock of Raw Materials 12,000 Add: Purchase of Raw Materials 40,849 52,849 Less: Closing Stock of Raw Materials 12,600

Contd. ...
Unit 7 : Basic Cost Terms and Concepts 29

52% **MATCHING BLOCK 17/35** **W**

Materials Consumed 40,249 Direct Labour Cost 25,000 Prime Cost 65,249 Factory Overheads (100 x Rs.25,000 165 ? ? ? ? ? ? 15,151 80,400 Add: Work-in-progress 11,000 91,400 Less: Work-in-progress 16,000 Works Cost 75,400 Add: General and Administration Expenses 4,600 Cost of Goods Manufactured 80,000 Add: Opening Stock of Finished Goods 17,000 97,000 Less: Closing stock of Finished Goods 21,000 Cost of Goods Sold 76,000 Add: Selling Expenses 3,400 Cost of Sales 79,400 Profit 70,600 Sales 1,50,000

Note: Calculation of Purchase of Raw Material Particulars `

60% **MATCHING BLOCK 18/35** **W**

Cost of Goods Sold 76,000 Add: Closing Stock of Finished Goods 21,000 97,000 Less: Beginning Stock of Finished Goods 17,000 Cost of Production 80,000 Less: General and Administration Expenses 4,600 Works Cost 75,400 Add: Work-in-progress (closing) 16,000 91,400 Less: Work-in-progress (beginning) 11,000 80,400 Less: Factory Overheads 15,151 Block III: Management Accounting 30 Prime Cost 65,249 Less: Direct Labour 25,000 Materials Consumed 40,249 Add: Closing Stock of Raw Materials 12,600 52,849 Less: Beginning Stock of Raw Materials 12,000

Purchase of Raw Materials 40,849
Production Account If the cost elements in the
cost sheet are shown in the form of ledger account it is called Production Account.
All expenses are shown on the debit side of this account and closing stock and sales are shown on the credit side. Sometimes the closing stock may be deducted from the debit side. Generally,
production account is the combination of cost sheet, trading account and profit and loss account. It consists of four parts. First part gives
the

prime cost; the second part gives the cost of goods
manufactured, third is gross profit and fourth will be net profit.
The specimen of production account
is given below in Table 7.3: Table 7.3: Proforma of Production Account Dr. Production Account Cr. Particulars ` Particulars ` To Opening Stock
of Raw Materials xxx By Closing Stock of Raw Materials xxx

77% **MATCHING BLOCK 19/35** W

To Direct Materials xxx By Prime Cost c/d (Balancing figure) xxx To Direct Labour xxx To Direct Expenses xxx To Prime Cost b/d xxx By

Closing Stock of Work-in-Progress xxx To Works Overhead xxx By Sale of By-products of Scrap

57% **MATCHING BLOCK 20/35** W

xxx To Opening Work-in- progress xxx By Cost of Goods Manufactured c/d (Balancing figure) To Cost of Goods Manufactured b/d xxx By Sales xxx To

Opening Stock of finished goods
xxx

54% **MATCHING BLOCK 21/35** W

By Closing Stock of Finished Goods xxx To Gross Profit c/d (Balancing figure) xxx To Administration xxx By Gross Profit b/d

xxx
Unit 7 : Basic Cost Terms and Concepts 31 Particulars ` Particulars ` Overheads To Selling and Distribution Overheads xxx To Net Profit (Balancing figure) xxx Illustration 7.4 Prepare Production Account from the following particulars as on 31.1.20xx Particulars Opening (` ) Closing (`)

55% **MATCHING BLOCK 22/35** W

Stock of Raw Materials 75,000 91,500 Stock of Finished Goods 54,000 31,000 Stock Work-in-Progress 28,000 35,000 Particulars ` Particulars ` Purchase of Materials 66,000 Sundry Factory Expenses 10,000 Direct Wages 52,500 Office Rent and Rates 9,000

Indirect Wages 2,750 Other Administration Expenses 1,500 Factory Rent, etc. 15,000 Sales Expenses 12,500 Depreciation on Machine 3,500 Sales 2,11,000 Solution Dr. Production Account Cr. Particulars ` Particulars ` To Opening Stock of Raw Materials 75,000 By Closing Stock of Raw Materials 91,500

70% **MATCHING BLOCK 24/35** W

To Direct Materials Purchased 66,000 By Prime Cost C/d (Balancing figure) 1,02,000 To Direct Labour 52,500 1,93,500 1,93,500 To Prime Cost b/d 1,02,000 By

Closing Stock of Work-in-Progress 35,000 To Works Overhead – Indirect Wages 2,750 By Cost of Goods Manufactured c/d (Balancing figure) 1,26,250

Block III: Management Accounting 32 Particulars ` Particulars ` – Factory Rent, etc. 15,000 – Depreciation on Machine 3,500 – Other Factory expenses 10,000 To Opening Work-in- Progress 28,000 1,61,250 1,61,250

87% **MATCHING BLOCK 25/35** **W**

To Cost of Goods Manufactured b/d 1,26,250 By Sales 2,11,000 To Opening Stock of Finished Goods 54,000 By Closing Stock of Finished Goods 31,000 To Gross Profit c/d (Balancing figure) 61,750 2,42,000 2,42,000 To Administration Overheads By Gross Profit b/d 61,750 –

Office Rent and Rates 9,000 – Other Administration Expenses 1,500 To
Selling and Distribution Overheads 12,500 To Net Profit (Balancing figure) 38,750 61,750 61,750
Tenders or Quotations Very often management is required to quote the
prices of its products in advance or has to submit tenders for goods to be supplied.
A tender has to be prepared very carefully as the receipt of orders depends upon the
price quoted. The preparation of tender requires information about the prime cost, overheads and the profit of the previous periods. After collecting the information, a tender is prepared
on the basis of previous costs taking into account the present conditions and anticipated changes in the future price level.
Overheads are
to be absorbed based on the suitable overhead absorption method. After taking into account the marketable conditions, a reasonable profit is to be added to the cost. Finally, quotation price is to be determined.
Illustration 7.5
From the following particulars you are required to prepare a statement showing (
a) The
cost of materials consumed (b) Prime cost (c) Works cost (d) Total cost
Unit 7 : Basic Cost Terms and Concepts 33 (
e) The percentage of works overheads to productive wages and (f) The percentage of general overheads to works cost:
Particulars ` Particulars `
Stock of finished goods on 1-1-20xx 1,27,400

45% **MATCHING BLOCK 26/35** **W**

Stock of finished goods on 31-12-20xx 1,36,500 Stock of raw materials on 1-1-20xx 58,240 Stock of raw materials on 31-12-20xx 61,880 Purchase of raw materials 13,28,600 Works overhead charges 2,26,135 Sale of finished goods 26,93,600 Office and general

expenses 1,22,782 Productive wages 9,04,540
The company is about to send a tender for a large plant. The costing department estimated that the materials required would cost ` 91,000 and the wages to workmen for constructing the plant would cost ` 54,600.
The
tender is to be made at a net profit of 20% on
the selling price. Show what the amount of tender
would be if based on the above percentages.

42% **MATCHING BLOCK 28/35** **SA** Cost Accounting Unit ! for checking.docx (D67919053)

Solution Statement of Cost Particulars ` Raw materials (opening stock) 58,240 Add: Purchase of raw materials 13,28,600 13,86,840 Less: Raw materials (closing stock) 61,880 a. Materials consumed 13,24,960 Productive wages 9,04,540 b. Prime Cost 22,29,500

Works

overhead charges 2,26,135 c. Works cost 24,55,635 Office and general expenses 1,22,782 d. Cost of Production or Total Cost 25,78,417 e. Percentage of works overhead charges to Productive wages = (` 2,26,135/` 9,04,540) ? 100 = 25% Block III: Management Accounting 34 f. Percentage of office and general expenses to Works cost = (` 1,22,782/` 24,55,635) ? 100 = 5%. Tender for a Large Plant Particulars ` Raw

71% **MATCHING BLOCK 27/35** **W**

materials 91,000 Wages 54,600 Prime cost 1,45,600 Works overheads (25% of wages) 13,650 Works cost 1,59,250 Office and general expenses (5% of works cost) 7,963 Cost of production 1,67,213 Profit (1/4

of cost of production) 41,803 Tender price 2,09,016
Illustration 7.6 On 15th August 20xx, the Steadfast cycle manufacturing company, was required to quote for a contract for the supply of 500 bicycles. From the following details,
prepare a statement showing the price to be quoted to give the same percentage of
net profit on turnover as was realized during the six months to 30th June 20xx.
Particulars ` Particulars ` Stock of materials on 1st January, 20xx 1,00,000 Indirect charges during 6 months to 30th June, 20xx 50,000 Stock of materials on 30th June, 20xx 14,000 Completed stock-in-hand on 1st January, 20xx Nil Purchase of materials during 6 months to 30th June, 20xx 1,50,000 Completed stock-in-hand on 30th June, 20xx 1,00,000 Direct wages for 6
months to 30th June 20xx 3,00,000 The number of bicycles manufactured during the six months was 2,000 including those sold and those in stock at the end of the period. The cycles to be quoted for are to be of uniform size and quality and similar to those manufactured during the six months to 30th June 20xx. Since 1st August, the cost of factory labour increased by 10% and that of materials by 15%. Sales during six months to 30th June, 20xx were ` 5,40,000.
Unit 7 : Basic Cost Terms and Concepts 35 Solution Statement of Cost for the Half-Year ended 30th June, 20xx Particulars ` Total (`) Per cycle (`)

58% **MATCHING BLOCK 30/35** **SA** Cost Accounting Unit ! for checking.docx (D67919053)

Opening stock of material 1,00,000 Add: Purchase of material 1,50,000 2,50,000 Less: Closing stock of material 14,000 Material used 2,36,000 118.00 Direct wages 3,00,000 150.00

Prime cost 5,36,000 268.00 Indirect charges 50,000 25.00 Cost of production 5,86,000 293.00 Less: Completed stock in hand on 30-6-20xx 1,00,000 Cost of goods sold 4,86,000 Profit (10% on sales) 54,000 Sales 5,40,000 Percentage of indirect charges on direct wages = (` .50,000/` .3,00,000) ? 100 = 16.67% Statement of Cost for Tender of 500 Cycles Particulars Per unit (` ) Total (`) Material (` 118 + 15% of 118) 135.70 67,850 Direct wages (` 150 + 10% of 150) 165.00 82,500 Prime cost 300.70 1,50,350 Indirect charges (1/6 of wages) 27.50 13,750 Cost of production 328.20 1,64,100 Profit (10% of sales or 1/9 of cost of production) 36.47 18,233 Amount of Tender 364.67 182,333
Check Your Progress – 2 6. Cost centers are centers a. Where business decisions are taken b. Where board meets c. Where revenue is earned d. Where costs are incurred e. Where costs are allocated
Block III: Management Accounting 36 7.
Which of the following item of expenditure is not included while preparing a cost sheet? a. Administration expense b. Materials consumed c. Labour cost d. Dividends paid e. Works overheads 8. A quotation of cost prepared for an activity to be taken up in future is called a. Tender b. Production Account c. Cost Sheet d. Cost Unit e. Statement of Cost and Profit 9. Tracing of costs is an attempt to assign costs on the basis of their cause. For which two reasons is cost tracing undertaken? a. Cost planning and Cost control b. Cost control and Product costing c. Cost planning and Cost allocation d. Cost allocation and identification of cost drivers e. Product costing and identification of cost drivers 10. Which formula, among the following given options, can be used to arrive at factory cost? a. Prime Cost + Factory Overheads b. Direct
materials + Direct wages c.
Prime Cost +
Factory Overheads +

Opening stock of work in progress – closing stock of work in
progress
d. Factory
Overheads + works cost
e.
Works cost +
Administration overheads
Activity 7.2 a.
Give examples of items that are excluded from cost while preparing the cost sheet.
Unit 7 : Basic Cost Terms and Concepts 37
b. Calculate the works cost, if the prime cost is ` 1,00,000, factory overhead is ` 20,000, closing work in progress is ` 30,000, and opening work in progress is ` 50,000. 7.9
Summary ?
A
cost unit is a quantitative unit of product or service for which costs are ascertained.
Cost center
is the
smallest
segment of activity or area of responsibility for which costs are accumulated. ?
A
collection of costs to be assigned to different subunits is called a cost pool. The responsibility centers, products or services to which costs are to be assigned are called cost objects. The process of assigning the costs in the cost pool to the cost objects is called cost allocation or cost distribution. ?
Costing
Accounting
is
the classification,
recording and appropriate allocation of expenditure for the determination of the
costs of
products or services,
and
for the presentation
of
suitably arranged data for purposes of control
and guidance
of management. ?
Cost
Accountancy is
the application of costing and cost accounting principles, methods and techniques to the
science, art and practice of cost control
and the ascertainment of profitability.
In order to ascertain the
cost,
a cost sheet is prepared periodically.
It
is
a document, which provides for the assembly of the detailed cost of a cost center or cost unit.
There is
no specific format for preparing a cost sheet. Generally, it is presented in a columnar form. If it is prepared in the form of ledger account, it is called Production Account. ? Very often management is required to quote the
prices of its products in advance or has to submit tenders for goods to be supplied.

Such a statement is called a tender or quotation. 7.10 Glossary Abnormal Cost is the cost that is not warranted under normal, external and internal conditions. Absorption Costing is the technique of costing in which all direct costs and manufacturing overheads are considered as part of the cost of the product. Administrative Costs are costs pertaining to any activity undertaken in the administrative function of a business organization.
Budgeted Costs represent an estimate of expenditure for different phases
or segments of business operations such as manufacturing, administration, sales
etc.
Block III: Management Accounting 38
Committed Costs are those to which the business has been committed due to decisions and actions taken by the management in the past.
Controllable Costs are those that can be controlled by a particular person or a group of
persons in the organization. Conversion Costs include direct labour costs plus manufacturing overhead costs. Cost Behaviour is the way in which a cost reacts or responds to changes in the level of business activity.
Cost Center
is the smallest
segment of activity or area of responsibility for which costs are accumulated.
Cost
Driver: Indirect costs are assigned to the cost objects on some reasonable basis. This basis chosen for allocation is called Cost Driver. Cost Unit or Cost Object is nothing but an entity, object or activity for which cost is being determined.
Differential Cost:
Change in cost
due to change in the level of activity or pattern or method of production
is
known as Differential
Cost.
Direct Costs are the costs that can be readily and specifically identified with the cost object. Direct Costing is
the ascertainment of direct costs in respect of department, process or product. This is marginal
cost
plus fixed cost which is directly chargeable to the department, process or product.
Distribution Costs are the costs associated with the activity of making the goods or services physically available to the ultimate consumer. Fixed Costs are those which remain fixed at the same amount irrespective of the level of activity or quantum of output. Historical Costs are costs which have already been incurred. Incremental Cost is the increase in cost. Indirect Costs in relation to a cost object are costs that cannot be readily and specifically identified with that cost object. Joint Costs are the costs incurred till the point when different joint products become separately identifiable and subsequent costs separately measurable. Manufacturing and Production Costs include all costs incurred from the time of procurement of materials to finished goods coming out of the production pipeline. Marginal Cost is the additional cost to be incurred for producing an additional unit. Marginal Costing is a costing method in which only the variable costs are considered as product costs and all fixed costs are considered period costs.
Unit 7 : Basic Cost Terms and Concepts 39
Normal Costs are costs which the organization incurs on a particular activity under normal, external and internal circumstances. Out-of-Pocket Costs result in cash outflow as opposed to just amortization of costs already incurred. For example: depreciation. Uncontrollable Costs are costs which cannot be controlled.
Variable
Costs are those which vary in direct proportion to the volume of output. 7.11
Self - Assessment Test 1. How do you distinguish between selling and distribution costs? 2. What are fixed, variable and semi-variable costs? 3. Explain the meaning of sunk cost, opportunity costs, out-of-pocket costs and imputed costs. 4. What is the relation between cost behaviour and cost estimation? 5. How are indirect costs treated in cost accounting? 6. Explain the treatment of scrap while preparing a cost sheet. 7. Distinguish between budgeted and standard costs. 7.12 Suggested Readings/Reference Material 1.

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Block III: Management Accounting 40 10. A. Ramiaya, Guide to Companies Act, 2013, LexisNexis, 19th edition, 2020. 11. Taxmann's. Companies Act, 2013 with Rules, 15th edition, July, 2020. 12. G K Kapoor and Sanjay Dhamija. Company Law and Practice Book. 24th Edition. Taxmann. 2019. 13. Chandra Sekhar. Financial Statement Analysis. Kindle Edition. 2018. 14. Gauba S Lal et.al. Financial Reporting and Analysis. Himalaya Publishing House. 2018. 15. Ravi M Kishore. Cost Management. Taxmann Allied Services (P) Ltd., New Delhi, 6th Edition, reprint, 2019. 16. S.P. Jain et.al. Cost Accounting Principles and Practice. Kalyani Publishers. 2016. Additional References 1. Accounting Standards Quick Referencer, April 2019, Published by ICAI. (Pdf downloaded), https://resource.cdn.icai.org/55939asb45327.pdf 1. KPMG Spark. How to read a cash flow statement. 2020, https://www.kpmgspark.com/blog/how-to-read-a-cash-flow-statement 2. Ministry of Corporate Affairs (MCA). E-book on Companies Act, 2013 http://ebook.mca.gov.in/default.aspx 4. ICMAI (Institute of Cost and Management Accountants of India. Cost Accounting Standards. https://icmai.in/CASB/casb-resources.php 7.13 Answers to Check Your Progress Questions 1. (d) Nature of business Costs are classified on the basis of nature of element, functions, traceability, variability, controllability, normality, capital or revenue, time, identification as part of inventory, according to planning and control, managerial decisions and others. 2. (b) Standard Costs The functional classification of costs includes manufacturing and production costs, administrative costs and selling and distribution costs. It does not include standard costs. 3. (e) Standard costing is merely an arithmetic exercise Budgeted costs are estimated costs and facilitate planning while standard costs are desired costs that facilitate control. 4. (c) Irrelevant in decision-making
Sunk cost is another name for historical cost. It is a cost that has already been incurred and is irrelevant to the decision-making process.
Unit 7 : Basic Cost Terms and Concepts 41 5. (
b)
Abnormal
Cost It
is
the
cost, which is normally incurred at a given level of output
in conditions which
are not favourable for that level of output. It
is not considered as
a part of cost of production and charged to Costing Profit and Loss Account. 6. (
d) Where costs are incurred
The smallest
segment of activity or area of responsibility for which costs are accumulated
is designated as a cost center. 7. (d) Dividends paid While preparing a cost sheet, the items such as interest paid, dividends paid, transfer to reserves, donations paid,
preliminary expenses written off, goodwill written off, cash discount paid, provision for taxation, provision for

income tax, profit/loss on sale of fixed assets etc., are excluded 8. (a) Tender Very often management is required to quote the
prices of its products in advance or has to submit tenders for goods to be supplied.
A tender has to be prepared very carefully as the receipt of orders depends upon the
price quoted. 9. (b) Cost control and Product costing Tracing of costs is an attempt to assign costs on the basis of their cause. Tracing of costs is essential for two primary reasons: cost control and product costing. 10. (c)
Prime Cost +
Factory Overheads +
Opening stock of work in progress – closing stock of work in
progress =
Factory
Cost
Factory cost
is also known as works cost. It is arrived at by adding all direct costs (
prime cost) and factory overheads and adjusting for opening and closing work-in-progress.
Unit 8 Cost
Analysis and
Decision Making Structure 8.1 Introduction 8.2 Objectives 8.3 Concept of Relevant Cost and Irrelevant Cost 8.4 Costs for Decision Making 8.5 Marginal Costing and Differential Cost Analysis 8.6 Make or Buy Decisions 8.7 Accept or Reject an Order/Foreign Orders or Exploring New Markets 8.8 Purchasing or Leasing 8.9 Sell or Further Process Decision 8.10 Product Mix Decision under Capacity Constraint 8.11 Closing Down of Factory or Segment 8.12 Marketing Decisions 8.13 Fixation of Selling Price 8.14 Pricing Methods 8.15 Selling Agents vs. Sales Force 8.16 Target Costing 8.17 Summary 8.18 Glossary 8.19 Self-Assessment Test 8.20 Suggested Readings/Reference Material 8.21 Answers to Check Your Progress Questions 8.1 Introduction
The previous unit introduced us to the costs terms and classification. The cost classification is the basis for various managerial decisions. This unit showcases how cost information data is useful for production, marketing and pricing decisions. Managerial decision-making is the process of choosing one among alternative courses of action. The manager chooses that course of action, which he considers as the most effective for achieving goals and solving problems. Decision-making is an integral part of all management functions – planning, organization, coordination, and control. All decisions are futuristic in nature, involving a forecast of what management thinks is likely to occur. But future is highly uncertain. Thus, business decisions have to be made with the full realization that there is some probability of the prediction, which underlies the decision taken, going off the mark. Some decisions are routine in nature. These
Unit 8: Cost Analysis and Decision Making 43
decisions take up very little of the manager's time either because there is very little uncertainty or because the cost is insignificant. On the other hand, managers have to take 'nerve-racking' decisions. The manager has to spend a considerable amount of time and thought on these decisions because they are crucial to the organization. In this unit, we will be discussing the significance of costs for decision making, meaning of Relevant Cost and Irrelevant Cost, Marginal Costing and Differential Cost Analysis and interpret the various managerial decisions on the basis of Cost information and analysis. We will also be discussing the various considerations required for fixation of selling price, different pricing methods, distribution related problems and the concept of target costing. 8.2
Objectives After reading through the unit, the student should be able to: ? Interpret the significance of cost

analysis for taking managerial decisions ? Distinguish between relevant and irrelevant cost ? Explain the marginal costing and differential costing analysis ? Explain the various production related decisions such as make or buy, accept or reject a foreign order, purchase or lease, sell or further process, closing down the factory or a segment ? State the major considerations for fixation of selling price ? Explain the different pricing methods ? Compare the channels of distribution that is the Selling Agents vs. Sales Force; and ? Describe the target costing approach 8.3 Concept of Relevant Cost and Irrelevant Cost Any financial decision involves a cost-benefit analysis. One significant component of this analysis is to quantify the costs that are relevant for a decision. Cost data are important since they are the basis in making decisions that are geared towards maximizing profit, or attaining other objectives. However, not all costs are important in decision-making.This calls for a segregation of costs on the basis of their effect on a decision. Such segregation is done by classifying costs into relevant costs and irrelevant costs. Such segregation is done by classifying costs into relevant costs and irrelevant costs. Examples of situations in which the relevant vs irrelevant classification is useful include decisions regarding: Shutting down a division of a business, Accepting an special order at lower price, Making a product in-house or purchasing it from outside, Selling a semi-finished product or processing it further, etc.

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Relevant Costs: Relevant costs are given the utmost importance in managerial decision-making. Their magnitude will affect a decision being made. The concept of managerial decision-making involves planning for the future of the business in terms of new products, entry into new markets etc., and other decisions like alternative course of actions to be taken at various situations. During the course of such decision-making, the management has to consider various cost related aspects. These costs are also called relevant costs as they are relevant for future decision-making. So, a cost can be considered as relevant cost if it is relevant and aids in helping the management to take right decision to achieve the objectives of the company. For example, a company now has two types of products and the direct material cost per unit is ` 25 and direct labour cost per unit is ` 20. It wants to make some changes in its product line. The new product line requires direct material at ` 25 per unit and labour cost of ` 22 per unit. In this case, the cost of material is constant and it is not relevant for decision-making. The labour cost is changing from the present level in case of the proposal. Hence, the labour cost is relevant. Irrelevant Costs: Irrelevant costs are those costs which will not be affected by any decision made by the management. Characteristics of Relevant Cost We are already familiar with the concept of relevant costs. Relevant costs are the costs that will make difference when one alternative is selected over the competing alternatives. Essentially, relevant costs have the following two characteristics: They are expected future costs: All future costs are not necessarily relevant to decision-making purposes, but no costs are relevant unless they pertain to the future. Expected future costs mean that the costs are expected to occur during the time period covered by the decision. Past or historical costs are relevant to the decisions only if they are expected to continue in the future. They differ between alternatives: If the same costs are incurred for both the alternatives, then they are not relevant. If the costs incurred for the alternatives are different, then they become relevant costs. For example, if the manager is evaluating the purchase of either a manual or an automated drill press, both of which require skilled labour costing ` 80 per hour, the labour rate is not relevant since it is the same for both the alternatives. If however, the manual drill press requires only semi-skilled labour at ` 60 per hour whereas the automatic drill press requires skilled labour at ` 80 per hour, then the labour rate is relevant because it is different for the two alternatives. The difference between the amounts of the two costs is called differential cost or incremental cost.

Unit 8: Cost Analysis and Decision Making 45 8.4

Costs for Decision Making Typically, in a cost accounting system, each product is charged with a portion of indirect costs, which are not traceable to the product. Hence, cost figures drawn from the cost accounting system are often not relevant since they are historical costs. Remember that costs, which differ between the alternatives in future alone, are seen as relevant. Sunk Cost A sunk cost is an expenditure made in the past that cannot be changed. These are past costs not future costs. Thus, these costs are not relevant for decision- making. For example, the cost of machinery purchased in 1995 is not relevant now in deciding whether to sell the machinery or not. Variable

Cost Variable costs are the costs that vary with the level of

activity. If they vary with different alternatives they are relevant for decision-making. Thus, it should be remembered that all variable costs are not relevant for decision-making. Fixed Cost For the purposes of short-term decision-making, fixed costs may be either relevant or irrelevant. When a fixed cost is incurred, only if a certain decision is taken, it is relevant. For example, the manufacture of a new product may entail the salary of a production supervisor. His salary, a fixed cost that will be incurred only if the new product is manufactured, is a relevant cost. If a fixed cost is incurred irrespective of whatever decision is taken in a certain situation, it is an irrelevant cost. For example, the salary of chief executive is incurred whether or not a new product is manufactured. Hence, in the context of a decision relating to the manufacture of the new product, the salary of chief executive, a fixed cost, is not relevant. Thus, it should be remembered that all fixed costs are not irrelevant for decision-making. Opportunity Cost This cost represents the benefit foregone in sacrificing the best alternative. To illustrate, consider the use of a machine for manufacturing product A. If product A is not manufactured, the best alternative use of the machine is to manufacture product B that generates certain revenue. The revenue of Product B forgone to manufacture Product
A is the
opportunity cost. Opportunity cost is a pure decision-making cost. It is an imputed cost, which does not require cash outlay, and it is not entered in the accounting books.
Out-of-Pocket Cost There are certain costs, which require cash payment to be made (
like salaries and
wages, rent) whereas many costs do not require cash outlay (
like
Block III: Management Accounting 46
depreciation). Out-of-pocket
costs involve cash outlays or require the utilization of current resources.
These may include direct cost or indirect cost or variable cost or fixed cost. These are relevant for making decisions like make or buy, price fixation during depression etc. Differential Cost In management accounting, differential cost is used as a synonym to relevant cost. This can be defined as
the change in the
cost
due to change in the level of activity or pattern or method of production.
In
other words, it is the difference between the costs resulting from the contemplated change. If the change in the cost is in the increasing form, it is called incremental cost, if it is decreasing with the decrease in output, it is called decremental cost. For proper analysis of differential cost, we should know the concept of incremental revenue, incremental costs, decremental revenue and decremental costs. Incremental cost increases between two alternatives whereas, decremental cost decreases between two alternatives. Incremental revenue increases between two alternatives, while decremental revenue decreases between two alternatives. Features The following are the main features of differential cost: ? Differential cost differs from one course of action to another. ? The differential cost data is related to costs, revenue and investment factors. ? Differential cost considers only incremental cost or decremental costs and not the cost per unit. ? While selecting an alternative, the proposal with positive difference between the revenue and cost is considered. ? Differential costing technique is used to analyze and present data for decision-making and it is not a regular or routine accounting work. Differential Cost Analysis While making decisions, management compares two or more alternatives. Differential cost analysis or differential costing
is a special technique to help management in decision-making which shows how costs and revenues would differ under different alternative courses of action. 8.5
Marginal Costing and Differential Cost Analysis Some management accountants use differential cost as a synonym to marginal cost. In fact, the theory of marginal costing is only a part of differential cost analysis. It is much more wider than the concept of differential cost analysis.
Unit 8: Cost Analysis and Decision Making 47 8.5.1

Concept of Marginal Costing Marginal Costing is a method of costing that deals with decision making on the basis of marginal or variable costs. Under marginal costing, all the costs are segregated into: 1. Variable Expenses 2. Fixed Expenses 3. Semi Variable/ Semi Fixed Expenses Decisions are taken by ascertaining contribution using the formula: Contribution = Sales – Variable Cost OR Fixed Cost + Profit This can be represented as follows: Sales – Variable Cost = Fixed Cost + Profit The above equation is referred to as the marginal costing equation. 8.5.2 Concept of Break-even analysis under Marginal Costing Break Even Point is the point or state of a business at which there is neither a profit nor a loss. In other words, it is at this point where the contribution is equal to fixed expenses. Break even in situations under which the costs of operating two alternative plants are equal. Though both the plants may have the same total costs, their total fixed costs and variable costs per unit may be different. In such a case, the firm may like to determine that point at which the total costs (fixed and variable) of operating both the plants are the same. Such a point may be called 'cost break-even point'. Alternatively: The Cost Break Even Point can also be determined by solving the following relation for the value of x. Cost Break Even Point = Fixed Cost of plant 1 + (Variable cost per unit of plant 1*X) Fixed Cost of plant 2 + (Variable cost per unit of plant 1*X) "X" in the above relation represent cost break-even point.

Block III: Management Accounting 48 8.5.3 Concept of Margin of Safety The

Margin of Safety represents the difference between the sales at break-even point

and the total sales. It can be expressed as a percentage as well as in value. The size of the margin of the safety shows the strength of the business. Profit * Sales Profit or Contribution P/V Ratio Example of Margin of Safety Let's assume that a company currently sells 3,000 units of its only product. The company has estimated that its break-even point is 2,800 units. Therefore, the company's margin of safety is 200 units. Angle of incidence: This is obtained from the graphical representation of sales and cost. When sales and output in units are plotted against cost and revenue the angle formed between the total

sales line and the total cost line at the break-even point is called the angle of incidence. 8.5.4

Similarities with Differential Costing a. Both techniques are based on the classification of costs into fixed and variable. If fixed costs do not change, the results under both remain the same. b. Both techniques are used for cost analysis. c. Both techniques are used for managerial decision-making and formulating policies. 8.5.5

Differences with Differential Costing The following Table 8.1 shows the differences between differential cost analysis and marginal cost analysis: Table 8.1: Differences between Marginal Costing and Differential Costing Sl.No Differential Cost Analysis Marginal Costing Analysis i. It is a costing technique used for decision-making purpose with the use of differential revenue and differential cost. It is a technique used in ascertaining the marginal cost and effect on changes in profit due to changes in volume. ii. This method can be applied in varied alternative proposals, hence the scope is wider. The scope of marginal costing is comparatively less.

Unit 8: Cost Analysis and Decision Making 49 Sl.No Differential Cost Analysis Marginal Costing Analysis iii. Differential costing uses the accounting information and it can only be part of accounting system. Marginal costing system can be included in accounting system. iv. The main analytical tools used in differential costing are incremental/ decremental cost, incremental revenue and incremental/decremental profit. In marginal costing, the main analytical tools are P/V ratio, break-even point, contribution, CVP analysis etc. v. It is not possible to ascertain exactly the differential cost and sometimes it is used in conjunction with costs and opportunity cost. The marginal cost can be calculated exactly by adding variable overheads to prime cost. vi. Differential costing can be used for short-term, medium-term and long-term decision-making. Marginal costing is mainly used for short-term and medium-term decision-making. Source: ICFAI Research Center

Check Your Progress - 1 1. The relevance of a particular cost to a decision is: a. Basis of apportionment of cost b. Size of the cost c. Risk involved in the decision d. Accuracy of the cost e. Potential effect of the cost on the decision 2. Which of the following represents a cost not relevant for decision- making? a. Marginal cost b. Differential cost c. Out-of-Pocket cost d. Variable cost e. Sunk cost 3. From the options given below, identify one of the features of differential cost. a. It is a sunk cost b. It is a future cost

Block III: Management Accounting 50 c. It is an irrelevant cost d. It is synonymous to marginal cost e. It uses break-even analysis 4.

There are certain costs, which require cash payment to be made.

What are these costs known as? a. Variable costs b. Fixed costs c. Out-of-Pocket costs d. In-the-Pocket costs e. Imputed costs 5. Which of the following statements represent a dis-similarity between marginal costing and differential costing? a. Both techniques are based on the classification of costs into fixed and variable. If fixed costs do not change, the results under both remain the same. b. Both techniques are used for cost analysis. c. Both techniques are used for managerial decision-making d. Both techniques aid in formulating policies e. Both techniques are used for long-term decision-making 8.6 Make or Buy Decisions A firm that is presently buying a product or part from outside may consider manufacturing that product or part in the firm itself. Such a decision-making alternative requires the firm to know through marginal costing what contribution to fixed costs will result from a 'make' decision. Make or buy decisions will be taken with the help of marginal costing in the following manner: a. When the capacity is available and it cannot be utilized for manufacture of other products, then the purchase cost is compared with the marginal cost or the total cost is compared with the purchase cost plus fixed cost of manufacture to take the decision to make or buy. b. When the capacity is available and it can be utilized for manufacture of other products, the purchase price should be compared with the marginal cost of the product plus opportunity cost, i.e., the loss of contribution of other product replaced. c. When there is no additional capacity available and it is proposed to acquire additional facilities for manufacture, the purchase price should be compared with the marginal cost plus fixed cost likely to be incurred for manufacturing with additional facility.

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Make or buy decision is important for any company. So before taking any decision one should consider certain things as: ? The capacity of the company in terms of people, plant, space etc., to achieve the required quantity and quality. ? The differential cost of making or buying the item. ? The opportunity cost of using existing capacity to manufacture alternative items. ? The level of variable overheads, which are charged to the item.

Illustration 8.1 RMS Ltd. manufactures sewing machines which have three components. The following data pertains to these components. Component Machine Hours Variable Cost (` ) Fixed Cost (`) Total (`) P 15 72 24 96 Q 24 90 30 120 R 30 90 90 180 Packing 150 60 210 Total 402 204 606 Selling price 750

The market offers a good demand for company's product, but the company is not able to supply the products due to the machine capacity limitation. So the management decided to purchase one component from outside supplier and produce maximum products with the capacity of the bought product. The purchase price of the three components is: P at ` 150, Q at ` 180 and R at ` 240. You are required to help the company management decide which component to buy from outside. Solution Purchase Machine hour % Utilization Nil – 69 100 P 69 – 15 54 69/54 128 Q 69 – 24 45 69/45 153 R 69 – 30 39 69/39 177

Block III: Management Accounting 52 Particulars Present If P Purchased If Q Purchased If R Purchased Variable Cost: (` ) P 72 150 72 72 Q 90 90 180 90 R 90 90 90 240 Packing 150 150 150 150 Total variable cost (`) 402 480 492 552 Selling price (` ) 750 750 750 750 Contribution (`) 348 270 258 198 Capacity utilization (%) 100 128 153 177 Contribution 116 345.6 394.7 350.5

As the contribution derived by manufacturing P and R and purchasing Q from outside is highest, the component Q should be purchased from the suppliers. Illustration 8.2 Payal Ltd., manufactures a picnic table which has three components A, B and C, one of each being required for each table. The company is working to its full machine capacity of 28,000 hours per period and the machinery used is capable of making all the components.

Data relating to current production are: Components Machine Hours Variable Costs (` ) Fixed Costs (`) Total Costs (`) A 6 150 60 210 B 10 180 70 250 C 12 180 180 360 Assembly 320 130 450 830 440 1,270 Profit 230 Selling Price 1,500

Over the next budget period the machine capacity cannot be increased although the assembly capacity can be increased as required. The budget for the next period is being prepared. Because sales are buoyant the purchase of one of the components is being considered and the following quotation has been received:

Component Price (`) A 220 B 280 C 320

Unit 8: Cost Analysis and Decision Making 53

The company has decided that only one component will be bought outside in any one period. The sales manager thinks that he could sell at least 50% more tables than at present and probably 75% more provided that the production capacity was available. You are required to: i. Give a statement showing current profitability. ii. Recommend which component should be bought outside if production is increased by 50% and how many components should be bought. iii. Recommend which component should be bought outside if production is increased by 75% and how many components should be bought.

Solution i. Current Production Machine hrs per unit of A – 6 hrs; B – 10 hrs; C – 12 hrs; Total 28 hrs Current machine hrs = 28,000 hrs Production (no. of tables) = 28,000 hrs / 28 hrs = 1,000 picnic tables Profitability: Sales value: 1,500 x 1,000 = 15,00,000 Less: Variable Costs 830 x 1,000 = 8,30,000 Contribution = 6,70,000 Less: Fixed Costs = 4,40,000 Profit = 2,30,000 Particulars A B C Purchase price (` ) 220 280 320 Variable Cost of Manufacture (`) 150 180 180 Savings (` ) 70 100 140 Hours per unit 6 10 12 Savings per hour (`) 11.67 10 11.67 Ranking for manufacturing I II I ii. If production is increased by 50% – 1000 x 150% = 1,500 Particulars Hours A = 1,500 x 6 = 9,000 B = 1,500 x 10 = 15,000 C = 1,500 x 12 = 18,000 Total 42,000

Block III: Management Accounting 54 But the total available hours are only 28,000 hrs. The lower ranked product B should be purchased. Manufacture of A & C will require 9,000 + 18,000 = 27,000 hrs. With Balance 1000 hrs, 100 units of B can be manufactured and 1,400 of B can be purchased. Resultant profit would be: Particulars ` Sales Value: 1,500 x 1,500 = 22,50,000 Less: Variable Cost A : Manufacture 1,500 x 150 = 2,25,000 B : Manufacture 100 x 180 = 18,000 Purchase 1,400 x 280 = 3,92,000 C : Manufacture 1,500 x 180 = 2,70,000 Assembly 1,500 X 320 = 4,80,000 Contribution 8,65,000 Less: Fixed Cost 4,40,000 Profit 4,25,000

iii. If production is increased by 75% = 1,000 x 175% = 1,750 Machine hrs required A: 10,500 B: 17,500 C: 21,000. When production is increased to 1,750 hours and if the lower ranked product B is purchased, A & C would require 10,500 + 21,000 = 31,500 hrs. But only 28,000 hrs are available. The company has taken a decision to purchase one component only. Hence C should be purchased. Now A & B would require 10,500 + 17,500 = 28,000 hrs. which are at hand. The resultant profit would be:

Particulars ` ` Selling price 1,500 Less: Variable Cost A: Manufacture 150 B: Manufacture 180 C: Purchase 320 Assembly 320 970 Contribution per unit 530 Contribution from 1,750 tables 9,27,500 Less: Fixed Cost 4,40,000 Profit 4,87,500

Unit 8: Cost Analysis and Decision Making 55 8.7

Accept or Reject an Order/Foreign Orders or Exploring New Markets The companies may get special orders from their customers for the supply of their regular products. In such cases, they have to decide whether the order should be accepted or rejected. The special orders may be either from the domestic or foreign customers. The customers will be quoting a price less than the normal selling price for such special orders. The companies usually take decision in such circumstances on the basis of differential cost analysis. So, they compare the incremental revenue with the differential cost. A company should consider the following factors before taking the accept/reject decision: a. The effect on the future revenue due to temporary reduction in selling price. b. The impact of reduced selling price on the existing customers when they come to know of the price reduction for special order. c. Possibility of selling extra units to new customers other than the special order. d. Reliability of the cost estimates for the special order. e. The effect of the present and future capacity in terms of plant expansion, finance, human resources etc.

Illustration 8.3 A factory manufacturing mechanical toys presents the following information for the year 20xx: Particulars (` ) (Present 30,000 units level) Material cost 2,40,000 Labour cost 4,80,000 Fixed overheads 2,40,000 Variable overheads 1,20,000 Units produced 30,000 units Selling price per unit ` 40

The available capacity is for production of 40,000 units per year. The firm has an offer for the purchase of 10,000 additional units at a price of ` 30 per unit. It is expected that by accepting this offer, there will be a saving of ` .1 per unit in material cost on all units manufactured; the fixed overheads will increase by ` 40,000 and the overall efficiency will drop by 3% on production. Prepare a statement showing the variation of net profits resulting from the acceptance of the order.

Block III: Management Accounting 56 Solution

Statement Showing the Variation of Net Profit Resulting from the Acceptance of the Order

No. Particulars 30,000 units 40,000 units Variation Material 2,40,000 2,80,000 40,000 Labour 4,80,000 6,59,794 1,79,794 Variable overheads 1,20,000 1,60,000 40,000 i. Total variable cost 8,40,000 10,99,794 2,59,794 ii. Sales 12,00,000 15,00,000 3,00,000 [30,000 @ ` 40 per unit] [30,000 @ ` 40 per unit +10,000 @ ` 30 per unit] iii. Contribution (ii) – (i) 3,60,000 4,00,206 40,206 iv. Fixed cost 2,40,000 2,80,000 40,000 v. Profit 1,20,000 1,20,206 206 The net profit will increase by ` 206 by the acceptance of additional order of 10,000 units.

Illustration 8.4 The following particulars are extracted from the cost records of Hindustan Shoes Ltd. Capacity utilization is 80%.

Particulars ` Sales 18,50,000 Direct material 5,00,000 Direct expenses 3,00,000 Variable overhead 1,50,000 Fixed overhead 5,50,000

The company got an order from the UK to export shoes for which it requires 50% of its plant capacity. The price is 10% less than the current price. The factory capacity can be increased by 10% with an extra cost of ` 1,00,000. You are required to advise the company whether to accept or reject the order. Solution If the company accepts the order, 50% of the plant capacity will be used for the special order and the rest of 50% plus the increased 10% capacity will be used for local market. To arrive at a decision, we need to consider the incremental revenue and the differential cost.

Unit 8: Cost Analysis and Decision Making 57 Incremental Revenue: Local sales 60% Sales revenue at 60% capacity = (18,50,000 x 60) / 80 = ` 13,87,500 The foreign order = 50% @ 10% less than the current price = (18,50,000/80) x 50 – 11,56,250 x (10/100) = 11,56,250 – 1,15,625 = ` 10,40,625 Total proposed sale = ` 13,87,500 + ` .10,40,625 = ` 24,28,125 Less: Present sale = ` 18,50,000 Incremental revenue = ` 5,78,125 i.e. (24,28,125 – 18,50,000) Differential Cost: Proposed cost for110% ` Direct material = (5,00,000/80) x110 = 6,87,500 Direct expenses = (3,00,000/80) x 110 = 4,12,500 Variable expenses = (1,50,000/80) x 110 = 2,06,250 Fixed cost = 5,50,000 Extra to be incurred = 1,00,000 19,56,250 Less: Present cost = 15,00,000

Differential cost = 4,56,250 As the incremental revenue exceeds the differential cost, the order can be accepted. 8.8 Purchasing or Leasing In case of capital investment decision, the company management will consider two alternatives: (a) whether the asset should be purchased, or (b) it should be leased. For the decision-making purpose, the total cost of the two alternatives will be compared to determine the additional savings. If there is a savings on purchase, then it should be considered and vice-versa. Illustration 8.5 ABC Ltd., has two alternatives to acquire a godown. Either the company can purchase the godown for ` 8,80,000 or acquire it on lease for an annual rent of ` 88,000. If the godown is purchased, then the land will cost ` .88,000 and renovation will be ` 1,32,000. If the company takes the godown on lease, it has to pay the insurance charges and tax. The insurance charge will be 1.1% to be computed on the value before renovation and it will be constant after that. The tax on property is ` 26,400. Repairs and maintenance to the property will be

Block III: Management Accounting 58 ` 26,400.

The estimated life of the godown is 20 years and depreciation is charged at straight-line method. The amount required to purchase the godown will yield 8% tax exempted interest if invested in securities. Advise the management and help it to decide whether to lease or purchase.

Solution Statement Showing the Annual Operating Cost for Two Alternatives Particulars Purchase (` ) Lease (`) Property Tax/Repairs 26,400 26,400 Insurance 1.1 % on 7,92,000 8,712 8,712 Depreciation (7,92,000 + 1,32,000)/20 46,200 – Lease rent – 88,000 Total cost 81,312 1,23,112 Interest (opportunity cost) 8,80,000+1,32,000 @ 8% 80,960 Total cost + opportunity cost 1,62,272 1,23,112

From the above analysis it is clear that the firm should go for leasing of the godown. The company can invest its money in marketable securities and get the interest income that is tax-free. 8.9 Sell or Further Process Decision In process industries different products are seen at every stage of process. The companies can dispose of these products in the market directly or they can further process these products and sell it at a higher price. Differential cost analysis can be used for this purpose to know whether the product can be sold profitably or it requires further processing to charge a premium. If there is no further capital investment, the decision can be taken by comparing differential cost for processing and the incremental revenue. Illustration 8.6 Deccan Agro Products Ltd., produces two joint products. The following cost information is available for the year 20xx.

Products Production in kgs Sale price (`) X 12,000 30 Y 24,000 40

The product Y can be processed further and product Z can be produced. Product Z can be sold in the market at ` 85 per kg. It requires an additional cost of ` 10,000 to process 24,000 kg. of product Y and the output of this process will be 12,000 kg. of Z. You are required to help the management decide in this respect.

Unit 8: Cost Analysis and Decision Making 59 Solution Particulars ` Incremental revenue: Product Z = 12,000 x 85 9,84,000 Product Y = 24,000 x 40 9,60,000 Incremental revenue 24,000 Differential cost: Additional processing cost 10,000 Incremental profit 14,000

As the incremental profit is more than the differential cost, the company should further process the product Y into product Z. Illustration 8.7 Fargo Ltd., manufactures two joint products P and Q. The following cost information is available from the company records.

Particulars ` Sales (P and Q) 9,37,500 Direct material 2,81,250 Direct wages 1,37,500 Variable overheads 150% of direct wages Fixed cost 2,50,000

The product P's sales constitute two-thirds of the total sales. The management is planning to process the joint products further to sell at a higher price. The following are the cost information estimated for further processing. (Amount in `) Particulars P Q Total Sales after further processing 7,50,000 3,75,000 11,25,000 Direct material 62,500 25,000 87,500 Direct wages 25,000 10,000 35,000

You are required to advise the management whether the further processing will be profitable.

Block III: Management Accounting 60 Solution Statement Showing Incremental Revenue and Differential Cost (Amount in `) Particulars P Q Total Sales on further processing Less: Sales before processing 7,50,000 6,25,000 3,75,000 3,12,500 11,25,000 9,37,500 Incremental revenue 1,25,000 62,500 1,87,500 Additional cost on processing: Direct material Direct wages Variable overheads 62,500 25,000 37,500 25,000 10,000 15,000 87,500 35,000 52,500 Total additional cost 1,25,000 50,000 1,75,000 Profit on further processing Nil 12,500 12,500

The management should process product Q that gives extra profit to the business and product P should be sold from the present stage and it does not require further processing. 8.10 Product Mix Decision under Capacity Constraint When a concern manufactures more than one product, a problem often arises as to the product mix or the sales mix which will yield the maximum profits. In determining the optimum or profitable sales mix, the products, which give the maximum contribution, are to be retained and their production should be increased. The production of products, which make comparatively less contribution, should be reduced or dropped altogether. Illustration 8.8 A confectioner markets three products, all of which require sugar. His average monthly sales, cost of sales and sugar consumption are as follows:

Particulars Product A Product B Product C Total

Sales (` ) 1,00,000 1,20,000 80,000 3,00,000 Cost of Sales (`) 60,000 80,000 56,000 1,96,000 Sugar Requirement (kg.) 5,000 8,000 2,400 15,400 Due to government restrictions, his sugar quota has been reduced to 14,500 kg., per month. Suggest a suitable sales mix, which would give the confectioner maximum profit under the given circumstances. Solution Availability of sugar is the limiting factor so we have to find out profit per kg of sugar in case of each product, to determine the profitability of various products.

Unit 8: Cost Analysis and Decision Making 61 Particulars Product A Product B Product C Sales (` ) 1,00,000 1,20,000 80,000 Less: Cost of Sales (`) 60,000 80,000 56,000 Profit (` ) 40,000 40,000 24,000 Sugar requirement (Kgs.) 5,000 8,000 2,400 Profit per kg of sugar (`) 8 5 10

If we see profit per kg of sugar we come to the conclusion that product B is the least advantageous product and product A and Product C should be given preference over product B. Sugar quota is 14,500 kgs whereas present requirement of sugar is 15,400 kgs. Therefore, present sales of all products cannot be continued, sales of least profitable product B should be reduced to cope with the shortage of sugar. Then the suitable sales mix is:

Particulars Sales Sugar Requirement (kgs) Product A 1,00,000 5,000 Product C 80,000 2,400 Product B 1,06,500 7,100 7,100 1,20,000 8,000 ? ? ? ? ? ? ? (14,500 – 7,400) Illustration 8.9 P Ltd. produces two products and the following particulars are available regarding them: Particulars Product P Product Q Sale price (` ) 24.00 14.00 Direct material cost (`) 12.00 8.00 Direct labor (hours) 1 1/2 Standard rate per hour: Direct labor (` ) 8 8 Variable overhead (`) 2 2 Fixed overheads budgeted ` 2,00,000 Total direct labor hours available 4,00,000.

The company does not want to reduce the production of product P below 1,20,000 units and of product Q below 4,00,000 units. Assume that materials are freely available and can be freely used with direct labor for either of products subject to the minimum production as stipulated above.

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Suggest the best production program by outlining the steps, along with the statements for the purpose, and show the net profit expected from this program.

Solution Calculation of Contribution Particulars Product P (` ) Product Q (`) 1. Sale price 24.00 14.00 2. Variable cost: Direct material cost 12.00 8.00 Direct labor cost @ ` 8 per hour 8.00 4.00 Variable overhead @ ` 2 per hour 2.00 1.00 3. Marginal cost 22.00 13.00 4. Contribution (1) – (3) 2.00 1.00 5. Labor hours 1 0.50 6. Contribution per labor hour (4)/(5) 2.00 2.00 Contribution for labor hour rate is same for either products, and excess labor hours can be used for any product or both products partly. Particulars Hours Hours Total hours available 4,00,000 Less: Labor hours required for minimum production program For 1,20,000 units of product P @ 1 hours per unit 1,20,000 For 4,00,000 units of product Q @ 1/2 hour per unit 2,00,000 3,20,000 Labor hours available to be used for any product 80,000 If 80,000 labor hours are used for product P, then the production will be as follows: Particulars Product P (Units) Product Q (Units) Minimum production 1,20,000 4,00,000 80,000 labor hours used for production P @ 1 labor hour per unit 80,000 – Production 2,00,000 4,00,000 Calculation of Profit for the above Production Program Particulars (Amount in ` ) Contribution on 2,00,000 units of product P @ ` 2 per unit 4,00,000 Contribution on 4,00,000 units of product Q @ ` 1 per unit 4,00,000 Total Contribution 8,00,000 Less: Fixed Overheads 2,00,000 Profit 6,00,000

Unit 8: Cost Analysis and Decision Making 63 If 80,000 labor hours are used for product Q, the production program will be as follows: Particulars Product P (Units) Product Q (Units) Minimum production 1,20,000 4,00,000 80,000 labor hours used for product Q @ 0.5 labor hour per unit 1,60,000 1,20,000 5,60,000 Calculation of Profit on the Second Production Program Particulars ` Contribution on 1,20,000 units of product P @ ` 2 per unit 2,40,000 Contribution on 5,60,000 units of product Q @ ` 1 per unit 5,60,000 Total contribution 8,00,000 Less: Fixed overheads 2,00,000 Profit 6,00,000 From the above, it is clear that the net profit for the suggested programs is same because contribution per labor hour, the limiting factor, is the same for each product. Illustration 8.10 Assuming that the rated capacity of the factory is 45,000 units, what should be the most profitable level of output? Particulars Output 30,000 Units From 30,001 to 40,000 From 40,001 to 45,000 Fixed cost (` ) 30,000 32,000 39,000 Variable cost per unit (`) 6 6 6.10 Sales revenue per unit (` ) 8 7.60 7.60 Solution Comparative Statement of Different Output Levels Output (in units) Selling Price per Unit (`) Sales Value (` ) Incremental Revenue (`) Variable Cost @ ` 6 and ` 6.10 Fixed Cost (` ) Total Cost (Variable Plus Fixed) Differential Cost (`) (a) (b) (c) (d) (e) = (a) x ` (f) (g) = (e) + (f) (h) 30,000 8.00 2,40,000 – 1,80,000 30,000 2,10,000 – 40,000 7.60 3,04,000 64,000 2,40,000 32,000 2,72,000 62,000 45,000 7.60 3,42,000 38,000 2,74,500 39,000 3,13,500 41,500 From the above, it is clear that incremental revenue exceeds differential cost up to 40,000 units, so a level of output of 40,000 units is the most profitable.

Block III: Management Accounting 64 Illustration 8.11 Suchitra Ltd., has prepared the following budget estimate for the year 20x0-x1. Particulars Product M (` ) Product N (`) Sales in Units 12,000 32,000 Selling price 80 128 Direct Materials 24 44 Direct Wages @Re.1 per Hour 16 24 Variable Overheads 8 12 Fixed Overheads 16 24 Total Cost 64 104 Profit 16 24 After finalization of the above budget estimates, it is observed that one-third of the production capacity is still idle. In order to improve the performance, the following proposals are considered: a. Product M will be discontinued and the capacity so released will be used for product N. The selling price of product N will, however, have to be reduced by ` 4 per unit in order to increase the volume of sales. b. Product N will be discontinued and the capacity so released will be diverted to the production of product P. The particulars relating to per unit of product P are as
under: Particulars ` Selling price 64 Direct materials 17 Direct labor @ Re/per/hr 12 Variable overheads 5
c. The idle capacity will be utilized for meeting an export demand for product Q. The particulars relating to per unit of product Q are as
under: Particulars ` Selling price 100 Direct materials 50 Direct labor @ 1Re/per/hr 25 Variable overheads 15
d. The idle capacity will be hired out by fixing a price in such a way that the same rate of profit per direct labor hour, as obtained in the budget estimates, is achieved. Prepare a statement showing the profitability of the products M and N as envisaged in the budget estimates. Also evaluate each of the above four proposals separately and prepare statements showing the profitability under each proposal.

Unit 8: Cost Analysis and Decision Making 65 Solution Calculation of Idle Capacity and Fixed Cost Particulars Product M Product N Labor hours required per unit (` 16/Re.1) (` 24/Re.1) 16 24 No. of units 12,000 32,000 Labor hours utilized 1,92,000 7,68,000 Total labour hours utilized = 1,92,000 + 7,68,000 = 9,60,000 Idle capacity = 1/3rd of the production capacity Idle capacity in terms of labor hours = 9,60,000 x 3/2 x 1/3 = 4,80,000 hours Total Fixed Cost: Product M = 12,000 x ` 16 = ` 1,92,000 Product N = 32,000 x ` 24 = ` 7,68,000 Total Fixed Cost = ` 1,92,000 + ` 7,68,000 = ` 9,60,000 Calculation of Contribution per unit Particulars Product M (`) Product N (` ) Direct materials 24 44 Direct wages @ Re.1 per hour 16 24 Variable overheads 8 12 Variable cost per unit (a) 48 80 Selling price per unit (b) 80 128 Contribution per unit (b) – (a) 32 48 Profitability Statement on the basis of Budget Estimates Particulars Amount (`) Total Contribution Product M 12,000 x ` 32 3,84,000 Product N 32,000 x ` 48 15,36,000 19,20,000 Less: Fixed Cost 9,60,000 Profit 9,60,000 Proposal I Capacity released by discontinuing M = 1,92,000 hours Capacity released utilized for product N will produce additional units of Product N = 1,92,000/24 = 8,000 units Therefore, total production of Product N = 32,000 + 8,000 = 40,000 units

Block III: Management Accounting 66 Profitability Statement Particulars Amount (` ) Sales 40,000 units @ ` 124 (i.e., ` 128 – ` 4) 49,60,000 Less: Variable Cost of 40,000 units @ ` 80 32,00,000 Total contribution 17,60,000 Less: Fixed Cost 9,60,000 Profit 8,00,000 Proposal II Capacity released by discontinuing N = 7,68,000 hours Capacity released will produce product P = 7,68,000/12 = 64,000 units Profitability Statement Particulars Amount (`) Amount (` ) Sales: Product M 12,000 units @ ` 80 9,60,000 Product P 64,000 units @ ` 64 40,96,000 50,56,000 Less: Variable Cost Product M 12,000 units @ ` 48 5,76,000 Product P 64,000 units @ ` 34 21,76,000 27,52,000 23,04,000 Less: Fixed Cost 9,60,000 Profit 13,44,000 Proposal III Idle capacity of 4,80,000 hours will be utilized by producing product Q which takes 25 hours to complete one unit. Production of Product Q = 4,80,000 /25 hours = 19,200 units Profitability Statement Particulars Amount (` ) Amount (`) Sales: Product M 12,000 units @ ` 80 9,60,000 Product N 32,000 units @ ` 128 40,96,000 Product Q 19,200 units @ ` 100 19,20,000 69,76,000 Less: Variable Cost: Product M 12,000 units @ ` 48 5,76,000 Product N 32,000 units @ ` 80 25,60,000 Product Q 19,200 units @ ` 90 17,28,000 48,64,000 21,12,000 Less: Fixed Cost 9,60,000 Profit 11,52,000

Unit 8: Cost Analysis and Decision Making 67 Proposal IV Profit as per budget estimates = ` 9,60,000 Labor hours utilized as per budget estimates = 9,60,000 hrs Profit per labor hour = ` 9,60,000/9,60,000 hrs. = ` 1 Idle capacity as per budget estimates = 4,80,000 hours Additional profit by hiring out idle capacity at the same rate of profit as per budget estimates 4,80,000 hours x Re.1 = ` 4,80,000 Add: Profit as per budget estimates = ` 9,60,000 Total Profit = ` 14,40,000 Proposal IV is recommended as it gives the maximum profit of ` 14,40,000. 8.11

Closing Down of Factory or Segment

Sometimes

it becomes necessary for a firm to temporarily close down its factory

or

a segment due to trade recession. The decision regarding closing down will depend on whether products are making a contribution towards fixed costs or not. If the products are making a contribution towards fixed cost, it is not advisable to close the factory or segment to minimize the losses. Even though the factory is closed down, some fixed costs could not be avoided, for instance maintenance of plant or overhauling etc. So these must be taken into account while making a decision. In addition to the cost consideration, some non-cost considerations should be taken into account before deciding to close down a factory or segment. The following are relevant in this respect: a. Once the business is closed down, the competitors may take advantage of the situation to establish their products and business of the company. It is difficult to recapture the market. Heavy advertisement costs have to be incurred to recapture the market. b.

Once the workers are discharged it may be difficult to get experienced and skilled

labourers again to restart the business. c. If some segment or activities are closed down, it may affect the reputation of the firm. d. Temporary close down may not be advisable, as the relationship with the suppliers is adversely affected. e. Fear of non-collection of dues from debtors in case of closure of business may not go in its favor. Illustration 8.12 Moon Ltd., manufactures 60,000 units of a product 'A'

in a year at its normal production capacity. The unit cost

consisting of

variable costs and fixed costs at this level are ` 13 and ` 4 respectively.

The selling price of Product A is ` 20.

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Due to trade depression, it is expected that only 6,000 units of 'A' can be sold during the next year. The management plans to shut down the plant. The fixed cost for the next year then
is
expected to be reduced to ` 99,000. Additional costs of plant shutdown are expected at ` 36,000. Should the plant be shut down? What is the shutdown point?
Solution
Comparative Statement Particulars Plant is operated Plant is shutdown (` ) (`) Variable cost 6,000 units @ ` .13 52,000 Fixed cost (60,000 x ` 4) 2,40,000 99,000 Additional shutdown cost – 36,000 Total cost (a) 2,92,000 1,26,000 Sales (6,000 x ` 20) (b) 1,20,000 – Loss (b) – (a) 1,72,000 1,26,000 Recommendation: A comparison of figures relating to two alternatives points out that loss is reduced by ` 46,000 (` .1,72,000 – ` 1,26,000) if the plant is shut down. Calculation of

shutdown point: Shutdown point = Total fixed cost – Shutdown cost/Contribution per unit = ` 2,40,000 – ` 1,26,000/` 20 – ` 13 = 16,285

units.
Dropping or Adding Product Line In a multi-product company, the management may have to decide on adding or dropping a product line. If a new product line is added, its sales and certain costs will also increase and reverse will happen when a product line is dropped. In order to arrive at such a decision, the management should compare the differential cost and incremental revenue and study its effect on the overall profit position of the organization. A decision concerning the discontinuation of a product should be taken after considering the following: ? Competitive nature of the products
of the company ? Value of resources released on discontinuation ? Contribution margin earned from that product ? Any contribution from that product will reduce the burden of total fixed costs of the firm and this will help in better profits than if such product is discontinued
Unit 8: Cost Analysis and Decision Making 69 Illustration 8.13 Excel Ltd., is engaged in 3 distinct lines of production. Their production cost per unit and selling prices are as under: Particulars Product X (` ) Product Y (`) Product Z (`) Production units 6,000 4,000 10,000 Cost: Material 36 52 60 Wages 14 18 20 Variable overheads 4 6 6 Fixed overheads 10 16 18 Total cost 64 92 104 Selling price 80 120 122 Profit 16 28 18
The management wants to discontinue one line and gives the assurance that production in two other lines shall rise by 50%. They intend to discontinue the line, which produces Product 'X', as it is less profitable. a. Do you agree with the scheme in-principle? If so, do you think that the line which produces 'X' should be discontinued? b. Offer your comments and show the necessary statements to support your decisions.
Solution Particulars ` Total Fixed cost X 6,000 units @ ` 10 60,000 Y 4,000 units @ ` 16 64,000 Z 10,000 units @ ` 18 1,80,000 3,04,000 Contribution = Selling Price – Variable Cost X = ` 80 – 54 ` 26 per unit Y = ` 120 – 76 ` 44 per unit Z = ` 122 – 86 ` 36 per unit If Product X is dropped Sale of Y and Z will increase by 50%. Then the sales would be Y – 6,000 units, and Z – 15,000 units. Particulars ` Total Contribution Product Y: 6,000 units @ ` 44 per unit = 2,64,000 Product Z: 15,000 units @ ` 36 per unit = 5,40,000 8,04,000 Less: Fixed Cost = 3,04,000 Profit = 5,00,000
Block III: Management Accounting 70 If Product Y is dropped Sale of X and Z will increase by 50%. Then the sales would be X – 9,000 units, and Z – 15,000 units. Particulars ` Total Contribution Product X: 9,000 units @ ` 26 per unit 2,34,000 Product Z: 15,000 units @ ` 36 per unit 5,40,000 7,74,000 Less: Fixed Cost 3,04,000 Profit 4,70,000 If Product Z is dropped Sale of X and Y will increase by 50%. Then the sales would be X – 9,000 units, and Y – 6,000 units. Particulars ` Total Contribution Product X: 9,000 units @ ` 26 per unit 2,34,000 Product Y: 6,000 units @ ` 44 per unit 2,64,000 4,98,000 Less: Fixed Cost 3,04,000 Profit 1,94,000 From the above, it is clear that, among the three alternatives, the highest amount of profit is earned when X line of production is discontinued. Thus, the management decision to discontinue X is correct. Activity 8.1 The X Co. Ltd., is planning to open a petrol station. The selling price of diesel would be ` 4.40 per liter. The variable charges including cost of diesel, vending etc., is about ` 4.00 per liter. The fixed costs for a month is ` 6,810. State how many liters would need to be sold to achieve a profit of ` 2,800.
_____ 8.12

Marketing Decisions – Need for Pricing Decisions Marketing is the only means for linking the producers (or potential producers) of a product or service with customers. Marketing arises naturally in all capitalist societies, but is not limited to capitalist societies. Its techniques are also applied in politics, religion, personal affairs, and many other aspects of life.
Unit 8: Cost Analysis and Decision Making 71
Generally, the term "marketing" refers to the promotion of products, especially advertising and branding. But in professional usage the term has broader meaning. It can be divided into four categories, often called the four Ps.
Product: The product management aspect of marketing deals with the specifications of the actual goods or service, and how it relates to the end-user's needs and wants. Pricing: This refers to the process of setting a price for a product, including discounts. Promotion: This includes advertising, promotion, publicity, and personal selling, and refers to the various methods of promoting the product, brand, or company. Place or Distribution: It refers to how the product gets to the customer; for example, point of sale placement or retailing. These four elements are often referred to as the marketing mix. In the subsequent pages, we will be discussing the need for pricing decisions, objectives of pricing, pricing strategy and various considerations required for fixation of selling price. We shall also discuss the different pricing methods, distribution problems and the concept of target costing. One of the most important operating decisions that a management must make is the pricing decision. Pricing refers to the assignment of a selling price to a product or service provided by the company. A company's long range survival depends on its pricing decision. In the long run, the firm's prices must be sufficient to cover all costs and leave a profit margin, adequate to reward the investors. If the firm's revenue consistently fails to cover costs and provide a satisfactory profit, the investors will seek new opportunities and the firm will fail. Pricing activities are more extensive than many people realize. It is easy to visualize the need to price each product in a department store or electrical goods store, but all organizations that provide a service for a fee or sell a product must decide on the amount to charge for each service or product. Thus, the number of products and services to be priced is quite large. Besides that, pricing does not end with a single pricing decision for each product or service. Prices must be continuously updated to ensure that they reflect management's desires in light of current costs, market conditions, and competitor actions. Some prices may remain unchanged for a year or more. But some prices like the food prices fluctuate throughout the year. Thus, pricing decisions are not static but become a part of continuing activity.
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Fixation of Selling Price Fixation of selling price is one of the important functions of management. Prices are generally determined by market conditions and other economic factors. Cost-Volume-Profit analysis assists the management in the fixation of selling prices under various circumstances. 8.13.1 Pricing under Normal Conditions Under normal circumstances, the prices are based upon total cost of sales so as to cover fixed as well as variable cost and, in addition, to provide for certain desired margin of profit. But prices can also be fixed on the basis of marginal cost by adding a sufficiently high margin to marginal cost so as to cover the fixed cost and profits. However, under other circumstances, products may have to be sold at a price below the total cost. In such circumstances, the prices should be fixed on the basis of marginal cost in such a manner so as to cover the marginal cost and contribute something towards the fixed expenses. 8.13.2 Selling Price below the Marginal Cost Sometimes it may become necessary to reduce the selling prices to the level of marginal cost or even below the marginal cost.
In the following circumstances, the selling price may be fixed even below the marginal cost: ? to introduce a new product in the market ?
to explore foreign markets ? to eliminate the competitor from the market ? to avoid the retrenchment of workers ? to dispose of perishable products ? to avoid extra losses by closing down the business ? to dispose of surplus stocks, and ? to utilize idle capacity Illustration 8.14 The marginal cost of a product is ` 15 and fixed expenses amount to ` 2,25,000. Selling price per unit is ` 17 and 40,000 units can be sold at this price. Should the company sell the product or not?
Solution Total marginal cost = 40,000 units @ ` 15 per unit = ` 6,00,000 Fixed cost = ` 2,25,000 Total cost = ` 8,25,000 Total cost per unit = ` 8,25,000/` 40,000 = ` 20.625 Even though the selling price of ` 17 is below the total cost, it is advantageous to sell the product at the selling price of ` 17 which is more than the marginal
Unit 8: Cost Analysis and Decision Making 73 cost of ` 15. This will reduce the loss on account of fixed expenses (if the product is discontinued) by ` 80,000 as shown below: Sales = 40,000 units @ ` 17 per unit = ` 6,80,000 Loss = Total Cost – Sales = ` 8,25,000 – ` 6,80,000 = ` 1,45,000 Loss if the product is discontinued (fixed expenses) = ` 2,25,000 Thus, loss of ` 80,000 (i.e. 2,25,000 – ` 1,45,000) will be reduced if product is sold at ` 17 per unit. 8.13.3

Pricing during Stiff Competition and Trade Depression During stiff competition, products may be sold at a price below the total cost. In such circumstances, the price should be fixed on the basis of marginal cost in such a manner so as to cover the marginal cost and contribute something towards the fixed expenses. During the depression also products may be sold at a price below the total cost. There is a fall in the price as a result of depression. The prices can be safely reduced to an extent which covers the variable cost and contributes something towards the fixed cost. 8.14 Pricing Methods The ideal solution to the problem of pricing is selecting a pricing method that suits the goals of the management of a company and its cost structure (refer to Figure 8.1). Let us assume that the company could estimate the demand schedule and the cost function and also it could acquire competitors' price list for comparison which helps the company establish its prices. Given these three, the company is now ready to select a price. The price will be set in such a way that it is neither too low to produce a profit nor too high to produce any demand. It will be somewhere between these two extremes. Figure 8.1: Major Considerations in Setting a Price

Low Price No possible profit at this price Product Costs Competitor's prices and prices of substitutes Unique product features High Price No possible demand at this price Source: ICFAI Research Center 8.14.1

Major Considerations in Setting a Price The above figure 8.1shows the major considerations involved in setting a price. The first consideration is product costs which forms the basis of price. Competitors' prices and the price of substitutes are the middle level considerations that the company has to take into account in setting its price. They help the firm to establish where its prices might be set and the company can use them as an orienting point for its own pricing. The last one, the unique product features in the company's offer establish the ceiling on its price.

Companies solve the problem of pricing by selecting a pricing method that involves one or more of these three considerations. The method will then hopefully lead to a specific price. 8.14.2 Cost plus Pricing Cost plus pricing is the most common method of pricing. Under this method, the price is determined to cover all the cost and a predetermined percentage of profit. It takes full costs into consideration. Thus, it is also called full cost pricing or cost based pricing. Illustration 8.15 Let us assume that a new company Feel Good Ltd., has been started. It is planning to start a talcum powder unit. To illustrate how the company sets the price of its product, let us assume that the company has budgeted production of 50,000 units requiring the following costs. If the management desires to have a mark-up of 25% on cost to make and sell, calculation of the target price, that is the price the management will seek in the market place, would be as follows:

Particulars Total (` ) Per Unit (`) Direct Materials 5,00,000 10.00 Direct Labour 2,00,000 4.00 Variable Overhead 1,50,000 3.00 Fixed Overhead 2,50,000 5.00 Fixed Selling and Administrative Overhead 1,00,000 2.00 Cost to Make and Sell 12,00,000 24.00 Desired Net Income (25% x 12,00,000) 3,00,000 6.00 Target Revenue (Price) 15,00,000 30.00

In the above illustration, the target price was based upon the total cost of the firm. This approach of full-cost based pricing is based upon the fact that in the long run the firm must recover all of its costs plus a normal profit margin, if it is likely to remain in business. So now, in the above illustration, if the market place accepts the price of ` 30, the firm will recover all of its costs and then earn the desired amount of profit at a volume of 50,000 units. If the price is too high, compared to the competitors' price, then the actual sales volume would be less than the budgeted volume and the company would fail in achieving its goals.

On the other hand, if the price is too low,

relative to the competition, the actual sales would exceed the planned volume of sales and because of its low pricing, the company will become a price leader. Of course, this low pricing will have an impact on the profitability of the company. In a competitive market place, the company would be foregoing available profits. In this way, target price represents the first step, trial and error (heuristic) approach to pricing.

The full cost approach to pricing tends to follow a modification of 19th century classical economic theory, which demanded the long run recovery of costs by firms wishing to perpetuate their existence. Most present-day economists maintain that the full cost approach misapplies long run analysis to short-run problems. Nevertheless, "some economists would assign a definite role to full cost in economic doctrine". Moreover, various investigations and statistics say that, "a majority of businessmen set prices on the basis of cost plus a fair percentage of profit". This position can be explained partly by the fact that some concerns, purporting to use the full cost method, actually calculate proposed prices that are subjected to adjustment for demand consideration, competition and market conditions. Limitations of Cost plus Pricing Despite its apparently widespread popularity, full-cost pricing has got many limitations. First of all, the use of standard mark-ups to set prices does not make logical sense. It ignores the vital economic considerations of demand and competition. Any pricing method that ignores the above said considerations is not likely to lead to the optimal price. It is prone to distortion by accounting misapplications such as undue reliance upon historical cost, an unjustifiable inclusion of manufacturing overhead based on predetermined rates, and an ignorance of the effect of volume on unit costs and profits. Cost-based pricing cannot be considered as a rigid, deterministic formula. It is simply one way of determining the target price on the first trial in a trial and error approach. If target price is unacceptable to the buyers in the market, the firm will have no choice but to adjust the selling price or to change their product line. The illustration discussed above includes only one product. Adopting cost-based pricing as the method of pricing becomes more complex in a multi-product firm, because the total cost per unit of a specific product is the total of the per unit variable cost plus some apportioned or allocated share of fixed costs. Still mark-up pricing remains popular for varied reasons. First, the sellers have better knowledge of costs than demand. By trying the price to cost, their pricing task is much simplified. They need not have to make frequent adjustments as demand changes. Second, when all the companies in the industry use the same pricing method, then prices tend to be similar thus minimizing price competition which would not be the case if the companies paid attention to demand variations when they priced. Third, cost-plus pricing is fairer to both buyers and sellers. Sellers do not take advantage of buyers when the latter's demand becomes acute. Yet, they earn a fair return on the investment. Illustration 8.16 A small scale manufacturer produces an article at the operated capacity of 5,000 units while the normal capacity of this plant is 7,000 units. Working at a profit margin of 20% on sale realization, he has formulated his budget as
under:
Block III: Management Accounting 76 Units / Particulars 5,000 units ` 7,000 units ` Sales realization 1,00,000 1,40,000 Variable overheads 25,000 35,000 Semi-variable overheads 10,000 11,000 Fixed overheads 20,000 20,000
The manufacturer 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 realization as for production to operated capacity. Assuming prime cost is constant per unit of production, what should be the minimum price to realize this objective? Solution Computation of differential cost of production of 1,000 additional units (` ) Units 5,000 ` 6,000 ` Differential cost for 1,000 units Prime cost (see Note a) 25,000 30,000 5,000 Variable overheads 25,000 30,000 5,000 Semi-variable overheads (see Note b) 10,000 10,500 500 Fixed overheads 20,000 20,000 – Total cost 80,000 90,500 10,500 For an additional output of 1,000 units over the operated capacity of 5,000 units the differential cost is ` 10,500 or ` 10.50 Profit Margin = 20% on sales or 25% on cost Minimum selling price = ` 10.50 + 25% on ` .10.50 = 10.5 + 2.625 = ` 13.125. Working Notes: a. Cost of Sales = 80% of sales (since profit is 20% on sales) = 80% of ` 1,00,000 = ` 80,000 Particulars ` ` Cost of Sales Less: Variable overheads 25,000 80,000 Semi variable overheads 10,000 Fixed overheads 20,000 55,000 Prime Cost 25,000
b. An additional production of 2,000 units will increase ` 1,000 in semi variable overheads. Hence, additional production of 1,000 units will increase ` 500 in semi variable overheads.
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Illustration 8.17 An institute for correspondence studies teaches wholly through the correspondence method using self-study packs, which enable students to prepare for professional qualifications. Each course of study was sold at the price of ` 150 last year and a total of 10,000 units were produced and sold. The production costs of the various courses offered by the institute are the same. The variable cost of producing a study course last year was: Direct materials ` 50; Direct labor ` 60; other direct costs (postage) ` 6, and variable overheads ` 4. The fixed overhead for the institute during the year was ` 2,00,000. During the coming year the costs of the organization are expected to increase by the following: Direct material 20%; direct labor 16.67%; other direct costs 67%; variable overheads 25%, and fixed overhead 5%. For the coming year you are required to find out the selling price of the study courses if the number of study courses sold and the annual profits are to remain as before.

Solution Last year's selling price = ` 150; Total variable cost = ` 120 Therefore, contribution per unit = ` 150 – ` 120 = ` 30 Profit = Contribution – Fixed cost = 10,000 x 30 – 2,00,000 = ` 1,00,000 New Variable Costs Particulars ` Material (50 x 1.2) 60.00 Labor (60 x 1.1567) 70.00 Other direct costs (6 x 1.67) 10.00 Variable overhead (4 x 1.25) 5.00 Total 145.00 New contribution = Profit + Fixed cost = ` 1,00,000 + (2,00,000 x 1.05) = ` 3,10,000 Contribution per unit = ` 3,10,000/10,000 = ` 31 per unit Therefore, Selling price = Variable cost + Contribution = ` 145 + ` 31 = ` 176

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Return on Investment Pricing Under full-cost pricing, the normal mark-up was based on the total cost. So, obviously, this method of pricing does not recognize capital investment in determining proposed selling price. Yet, the return on capital required to produce, finance and distribute products is widely recognized as crucial index of managerial efficiency. Consequently, management can aid its performance by knowing what selling price would provide a given rate of return on investment. To illustrate how this practical approach to the determination of the normal mark-up on price as a certain rate of Return On Investment (ROI), let us consider the previous illustration dealt in the full-cost pricing method. Assume the company brings in a capital of ` 20 lakh and the cost of raising its capital is 15%. The calculation of proposed price would be as follows:

Particulars Total Per Unit (`) (`) Total costs of make and sell 12,00,000 24.00 Mark-up (15% x 20,00,000) 3,00,000 6.00 Proposed selling price 15,00,000 30.00

Even this method does not speak about the allocation or apportionment of fixed cost, but the advantage that ROI pricing has over cost-plus pricing is that the mark-up for net income has a definite methodology. Besides that, this method furnishes an excellent analytical tool for appraising alternative selling prices. Not only does it guide management in determining what selling price will provide a given rate of return, but it may be used to show what rate of return a given price will bring.

Illustration 8.18 A company has furnished the following cost data: Particulars Direct material ` 7.50 Direct wages ` 6.00 Variable overheads ` 1.50 Fixed factory overheads ` 13,00,000 p.a. Fixed selling and administration overhead ` 7,50,000 p.a. Capital employed on fixed assets ` 20,00,000 Annual sales 8,00,000 units

Capital employed in current assets is 50% of sales. Determine the selling price per unit to yield 20% return on capital employed.

Solution Let the selling price per unit be x Capital employed = Fixed assets + Current assets = ` 20,00,000 + 50% of 8,00,000x = ` 20,00,000 + 4,00,000x

Unit 8: Cost Analysis and Decision Making 79 Profit = 20% on capital employed = 20% (` 20,00,000 + 4,00,000x) = ` 4,00,000 + 80,000x Cost = Variable Cost + Fixed Cost = 15 x 8,00,000 + 20,50,000 = ` 1,20,00,000 + 20,50,000 = ` 1,40,50,000 Sales = Cost + Profit 8,00,000x = ` 1,40,50,000 + ` 4,00,000 + 80,000x 7,20,000 x = 1,44,50,000 x = 1,44,50,000/7,20,000 = ` 20.06 or ` 20

Selling price per unit = ` 20 8.14.4 Contribution-Margin Approach to Pricing Contribution Approach pricing is also a cost-plus type of pricing. The difference between the variable cost and revenue related to any given quantity of products is called Contribution Margin. The term measures the contribution these products make towards meeting period costs and desired profit. In contribution approach pricing models also, only variable costs are used as the basis of pricing. The pricing model is concerned only with the costs that vary with the product or service being priced. Allocation or apportionment of fixed cost to product or service is ignored in this approach to pricing. To illustrate how pricing issue is solved through contribution approach model, let us assume the following variable cost data that relates to an imaginary company FDP Ltd., a single product company which manufactures TV boosters.

Resource Unit Variable Cost (`) Direct Materials 120 Direct Labour 40 Variable Overhead 15 Variable Selling and Administrative Overhead 5 Total Variable Cost 180

Selling price equals variable costs plus 75 per cent. So, the selling price of the product is ` (180 + 75% x 180) = ` 180 + 135) = ` 315. The above illustration totally ignores the fixed cost in pricing the product. Although fixed costs are not assigned to cost objectives under the contribution approach, they must be taken into consideration in determining the mark-up to be added to the variable cost to arrive at the target selling price. The mark-up is added in such a way that it provides enough revenue to cover all of the fixed costs and still provide a satisfactory profit.

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The contributions approach is appealing for a variety of reasons. The managers can easily visualize the relationship between prices and costs that vary directly with sales. Variable cost data is available readily as they are used in segmental contribution reports and variable costing income statements. The complications of fixed cost allocation can be avoided with the contribution approach. In addition to serving as a potential cost base for establishing the price of new and standard products, the contribution margin approach is an excellent analytical tool in a number of other pricing decisions. This approach uses the incremental view that the only costs relevant to pricing decisions are those costs that would be avoided if the sales order were not accepted. Contribution margin approach leads directly into the study of cost, volume, profit and revenue interactions. Since competition and customer demand also enter the pricing decision, selling prices hardly have a constant relationship to product cost. The net income depends upon a combination of price, volume, sales mix and cost structures. Thus, the contribution margin pricing approach allows management a rapid way of assessing the sensitivity of volume and price interactions. A word of warning about the role of the contribution approach in pricing seems appropriate at this point. There is always the danger that the use of the contribution margin could lead to short-term underpricing and that, as a result, the long run financial health of the company would be affected. However, if the information available in the contribution margin approach is used in cost- volume-profit analysis, there is no reason for the short run attitude to dominate. 8.14.5 Relationship between Full Cost and Contribution Margin Pricing Although the full cost pricing and contribution-margin based approach for pricing are considered as distinctively different approaches, by and large, they represent to a certain degree, cost plus type pricing. They can be considered complementary to each other but not competing. Fixed costs are important in both the pricing models. But in contribution margin pricing, they are treated in a different manner than in the full-cost pricing method. Full-cost pricing makes a normal mark-up on total costs and it does not take volume of production into consideration. On the other hand, contribution margin approach to pricing is concerned about cost, volume and profit and makes cost-volume-profit analysis. But in both the methods, the selling prices proposed must be only tentative as they are always subjected to adjustments. 8 .14.6 Differential Cost Pricing Under full-cost pricing, a selling price is proposed for all units produced at any given level of activity. It is designed to recover both fixed and variable costs in a proposed product price. The full-cost pricing ignores the above fact and as a result, the proposed selling price calculated for the additional units may be unnecessarily inflated.

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The recognition of differential cost on incremental cost pricing makes it possible to overcome the above said limitation of full-cost pricing. Since differential costs equal variable cost per unit times the number of units of additional production plus the new fixed costs that may be incurred, it is necessary to have a clear delineation between fixed costs and variable costs. Exhibit 8.1 gives the insight into differential pricing technique adopted by Pfizer in its pricing of COVID-19 Vaccine.

Exhibit 8.1: Pfizer's Differential Pricing Strategy for COVID -19 Vaccine Pfizer is an American Pharmaceutical company that also participated in the COVID-19 vaccine development process. Its vaccine is called the Pfizer– BioNTech COVID-19 vaccine and is sold under the brand name 'Comirnaty'. In December, 2020, the company released a statement saying that it has followed a differential pricing strategy and the vaccine will be priced differently in different countries. Termed as 'tier pricing', the company will have

where the company will distribute it at a price which is non-profit making. Source: Livemint.

100% **MATCHING BLOCK 32/35** W

Covid 19 vaccine to have differential pricing for different countries: Pfizer.

December, 2020. https://www.livemint.com/

100% **MATCHING BLOCK 33/35** W

science/health/covid-19-vaccine-to-have-differential- pricing-for-different-countries-pfizer-11607521199878.

html Let us consider the following data to illustrate differential cost analysis. Illustration 8.19 The data given below relates to the assumed facts for product Q by a company. Product Q Assumptions Practical Capacity 15,000 direct labor hours Budgeted Capacity 12,000 direct labor hours = 12,000 x 2 = 24,000 units Units produced/D.L. hour 2 units Estimated Variable Costs Total per unit ` ` ` ` Direct Material 1,92,000 8.00 Direct Labor (` 4 per hour) 48,000 2.00 Manufacturing Overhead Fixed 1,20,000 5.00 Variable 24,000 1,44,000 1.00 6.00 Selling and Administrative Fixed 96,000 4.00 Variable 24,000 1,20,000 1.00 5.00 5,04,000 21.00

Block III: Management Accounting 82 We also assume that the fixed costs are to remain unchanged within the range of 90 to 120 percent of budgeted activity. Solution The analysis of differential costs is shown below. Differential Cost Analysis Percentage of Budgeted Capacity 90% 100% 110% 120% Level of Activity in Units 21,600 24,000 26,400 28,800 Total Variable Costs 2,59,200 2,88,000 3,16,800 3,45,600 Fixed Costs 2,16,000 2,16,000 2,16,000 2,16,000 Total Costs 4,75,200 5,04,000 5,32,800 5,61,600 Average Unit Differential Cost 12.00 12.00 12.00 12.00 Average Unit Cost 22.00 21.00 20.18 19.50 Average Unit Cost Change 1.00 0.82 0.68

In the above illustration, since the fixed cost does not change over the change in level of activity, only the variable costs account for the difference in total costs between any two levels of activity. In each instance, the average unit differential cost is computed by dividing the increase in variable costs by the number of additional units produced. It is evident from the above that although the average unit cost ranges from ` 22.00 to ` 19.50, the average unit differential cost stays at ` 12.00 whenever additional units are produced. It follows that, if 21,600 units can be profitably disposed off at a unit price in excess of ` 22.00, the sale of additional units at any unit price in excess of ` 12.00 will increase profits when the overall marketing conditions remain stable. The problem is now for holding the original market intact and looking for the outlet for the additional production. Perhaps, the solution may be found by using differential cost analysis to guide the decision on the desirability of bidding for added production. Advantages of Differential Cost Pricing The differential cost analysis furnishes an excellent tool for pricing and provides useful information for profit planning when the entire productive output can be disposed off in a single market. To support this point, just take the illustration given above. In that, we need only to point out that the average unit cost change indicates the amount by which the unit price may be reduced to yield increased sales volume, while still permitting the earning of same profit on each unit sold. Under such conditions, profits will increase by an amount equal to the unit profit margin multiplied by the additional units to be sold. For instance, assume that 21,600 units can be sold for ` 30 per unit. If the indicated price reduction of ` 1.00 will permit 24,000 units to be sold at ` 29 each, the increase in total profits will be ` 19,200 which is obtained by multiplying the constant unit profit margin of ` 8.00 with 2,400 additional units.

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Another advantage of differential cost analysis is that it is related closely to economic marginal analysis. As the economist maintains that to maximize income, a firm should produce at the point where the marginal revenue equals marginal cost, in differential cost analysis, the accountant reasons that the firm should produce at the point where differential costs equal differential income. Even though differential costs render many benefits in guiding pricing policies, indiscriminate reliance upon this method can be dangerous. For example, it could bring about pricing decisions that tend to disregard the necessity of recovering total costs in the long run. Moreover special price reduction could have unfavorable repercussions on regular customers or impel competitors to take similar action. To summarize, differential cost accounting can help management in taking price decisions, but does not replace judgment. Illustration 8.20 DAR Ltd., has a budget to make 1,50,000 units of a product. The variable cost per unit is ` 15. Fixed costs are ` 13,50,000. The finance director has suggested that the cost plus approach should be used with a profit mark-up of 25%. However, the marketing director disagreed and has supplied the following information:
Price per unit (`) Demand (Units) 27 1,26,000 30 91,200 33 1,05,000 36 96,000 39 81,000
As a management accountant of the company, analyze the above proposals and comment. Solution a. Finance Director's Cost Plus Approach According to this approach the selling price of the product will be as
under: Particulars ` Variable cost 15.00 Fixed cost per unit 9.00 Total cost 24.00 Profit (25% of cost) 6.00 Selling price 30.00
At a selling price of ` 30 per unit, the total sales will be 91,200 units.
Block III: Management Accounting 84 The total profit will be as under: Particulars ` Contribution (91,200 x ` 15) 13,68,000 Less: Fixed cost 13,50,000 Total profit 18,000 b. Marketing Director's Approach According to this approach, the profit at different selling prices will be as under: Price/ Unit Contribution/ Unit Units Demanded Total Contribution (` ) Fixed Cost (`) Net Profit (` ) ` 27 ` 12 1,26,000 15,12,000 (13,50,000) 1,62,000 ` 30 ` 15 91,200 13,68,000 (13,50,000) 18,000 ` 33 ` 18 1,05,000 18,90,000 (13,50,000) 5,40,000 ` 36 ` 21 96,000 20,16,000 (13,50,000) 6,66,000 ` 39 ` 24 81,000 19,44,000 (13,50,000) 5,94,000
The above table shows that the marketing director's approach is correct and ` 30 per unit is not the best price. The best price is ` 36 per unit, which gives maximum profit. 8.15 Selling Agents vs. Sales Force The distribution decisions in a marketing mix are about getting the products to the customer. Some examples are decision on distribution channels, warehousing, distribution centers, marketing coverage etc. One of the frequently required decisions is to employ sales agents or establish one's own sales force. Sales agent versus Sales force is one of the most important decisions for the marketing managers. The economic criteria can be evaluated by means of a break-even chart for choosing a channel of distribution (i.e., selling agents or sales force). In the following figure the choice between having sales agents and establishing a branch sales office is depicted. If selling agents are employed, the level of fixed costs is less but the variable cost (i.e., commission) is higher. If branch is established, the level of fixed cost is more (i.e., rent, salaries etc.) and the variable cost is less compared to the other option. If the level of sales is expected to be below the point Q on the horizontal scale, then selling through sales agents is preferable; otherwise a branch office is to be preferred.
Unit 8: Cost Analysis and Decision Making 85 Figure 8.2: Break-even Chart for Sales Agents vs. Sales Force Source: ICFAI Research Center
Illustration 8.21 ABC Ltd., manufactures a range of products, which it sells through the manufacturer's agents to whom it pays commission of 20% of the selling price of the products. Its budgeted profit and loss statement for 20xx is as follows:
Particulars Amount (` ) Amount (`)
Sales 11,25,000 Less: Prime costs and variable overhead 3,93,750 Fixed overhead 1,81,250 5,75,000 5,50,000 Selling Costs: Commission to manufacturer's agents 2,25,000 Sales office expenses (fixed) 10,000 2,35,000 3,15,000 Administrative costs (fixed) 1,50,000 Profits 1,65,000
Subsequent to the preparation of the above budgeted profit and loss statement, the company is faced with a demand from its agents for an increase in their commission to 22% of selling price. As a result, the company is considering whether it might achieve more favorable results if it were to discontinue the use of manufacturer's agents and instead employ its own sales force. The costs this could involve are budgeted as follows:
Particulars Amount (`) Sales manager (Salary and expenses) 37,500 Salesmen expenses (Including traveling costs) 10,000 Sales office costs (Additional to present costs) 25,000 Interest and depreciation on sales department cars 17,500 Q O Sales agent costs Sales office costs Sales Level Cost Rs.
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In addition to the above, it will be necessary to hire four salesmen at a salary of ` 20,000 per annum each plus commission of 5% on sale plus car allowance of ` 1 per kilometer to cover all costs except interest and depreciation. On the assumption that the company decides to employ its own sales force on the above terms, you are required to ascertain the maximum average kilometer per annum that salesman could travel if the company is to achieve the same budgeted profit as it would have obtained by retaining the manufacturer's agents and granting them the increased commission they had requested. Assume that sales in each case would be as budgeted.

Solution Calculation of Economies of Employing Company's Own Sales Force Particulars Amount (` ) Amount (`) Savings in existing commission (20% of Sales) 2,25,000 Saving in proposed increase in commission (2% of Sales) 22,500 Total Savings in Commission (i) 2,47,500 Additional Costs: (excluding car allowance) Commission (5% of Sales) 56,250 Sales manager (Salary and expenses) 37,500 Salesmen's expenses 10,000 Sales office costs 25,000 Interest and depreciation on sales department cars 17,500 Salesmen's salary (4 x ` .20,000) 80,000 Total Costs (ii) 2,26,250 Net savings prior to paying car allowance 21,250

The above calculations show that there would be net saving (excluding salesmen's car allowance) to achieve the same budgeted profit as company would have obtained by retaining the manufacturer's agents and granting them increased commission. Since the car allowance of salesmen is ` 1 per km., the maximum total kilometers to be traveled by all the salesmen would amount to ` 21,250. The number of salesmen being 4 the maximum average kilometers per sales men would amount to ` 5,312 (i.e., 21,250/4). 8.16 Target Costing As a totally new product and its industry develop, it starts to compete based on its new technology, concept, and/or service. Competitors emerge and the basis for competition covers other areas such as cycle time, quality or reliability. As the industry becomes mature, the basis of competition typically moves to price.

Profit margins shrink. Companies begin focusing on cost reduction. However, the cost structure for existing products is largely locked in and cost reduction activities have limited impact. As companies begin to realize that the majority of a product's costs are committed, based on decisions made during the development of a product, the focus shifts to actions that can be taken during the product development phase. Until recently, engineers have focused on satisfying a customer's requirements. Most development personnel have viewed a product's cost as a dependent variable that is the result of the decisions made about a product's function, features and performance capabilities. Because a product's costs are often not assessed until later in the development cycle, it is common for product costs to be higher than desired. The long-term financial success of any business depends on whether its prices exceed its costs and are adequate to finance growth, provide for reinvestment, and yield a satisfactory return to its stakeholders. As competition increases, and supply exceeds demand, market forces influence prices significantly. To achieve a sufficient margin over its costs, a company must manage those costs relative to the prices the market allows or the price the firm sets to achieve certain market penetration objectives. In the context of these characteristics, the practice of target costing has evolved.

Effective management of cost makes an organization more strong, more stable and helps in improving the potential of a business. The organization calls for a system that would monitor the full economic impact of the business, on resource acquisition and consumption.

Target costing is defined as "a cost management tool for reducing the overall cost of a product over its entire life cycle with the help of the production, engineering, R&D." Target costing process starts with determining market- based prices based on market and competitive conditions and then subtract the required margin to determine the product or service level target costs. Such aggregate level target costs can be useful in designing value delivery processes and determining the relative cost contribution of people, process and technology elements in a manner that achieves target cost before costs are incurred. Target costing is fundamentally a different approach. It is based on three premises: (i) orienting products to customer affordability or market-driven pricing, (ii) treating product cost as an independent variable during the definition of a product's requirements, and (iii) proactively working to achieve target cost during product and process development. It is a profit and cost management system that helps a company to achieve market and financial success by planning the portfolio of services, and designing the products, processes and related cost structures that provide value to customers.

Exhibit 8.2 discusses the new approaches to target costing Exhibit 8.2: New approaches to Target Costing Deloitte article on "target costing in disruptive times" highlights the need to adopt target cost control in development projects as such projects face challenges such as: ? Diverse types

of product features and versions ? Reduced cycles for development ? Emerging new business service models ? Isolated data silos ? Need for greater integration of softwares ? New laws and regulations In order to face these challenges, the article proposes a “next level target costing approach”
with features such as: 1. Target setting by aligning the top-down and bottom-up targets 2. Outside-in-view that applies outside information to validate cost targets, cost decisions and forecasts 3. Cross functional governance – Enables a cross functional view in setting targets 4. Value focus – Focusing on the high value parts/divisions etc 5. Lean steering mechanism – setting higher standards and ensuing effective control 6. Common data and language – Using big data and analytics to support the target costing process. The next level target costing approach is beneficial as it provides increased cost transparency, effective controlling, integration of cost data leading to increased efficiency.
Source: Nikolas Helbig. Target Costing in Disruptive Times. Deloitte, 2021 https://www2.deloitte.com/de/de/pages /operations/articles/target-costing-in-disruptive- times.html
Target costing is a customer-oriented technique that is widely used by Japanese companies and which has also been adopted by companies in Europe and the US. The target costing process is a logical outgrowth of determining the causes of cost and seeking ways to reduce or eliminate those costs before production costs were incurred, while simultaneously looking to improve quality and customer satisfaction.
Unit 8: Cost Analysis and Decision Making 89 Illustration 8.22 Anuradha Enterprises has prepared a draft budget for the next year as follows: Quantity 20,000 units Sales price per unit 30 Variable cost per unit: Direct material 8 Direct labour (2 hours x ` 3) 6 Variable overhead 1 Contribution per unit 15 Budgeted contribution 3,00,000 Budgeted fixed costs 2,80,000 Budgeted profit 20,000
The board of directors is dissatisfied with this budget, and asks a working party to come up with an alternative budget with higher profit figures. The working party reports back with the following suggestions that will lead to a budgeted profit of ` 50,000. The company should spend ` 54,000 on advertising, and put the sales price up to ` 32 per unit. It is expected that the sales volume will also rise, in spite of the price rise, to 24,000 units. In order to achieve the extra production capacity, however, the work force must be able to reduce the time taken to make each unit of the product. It is proposed to offer a pay and productivity deal in which the wage rate per hour is increased to ` 4. Ascertain the revised labour time required to achieve the target profit. Solution
Particulars ` ` Budgeted Fixed Costs 2,80,000 Additional expenditure on advertising 54, 000 Total revised fixed cost 2,80,000 + 54,000 3,34,000 Target profit 50,000 Required contribution to achieve a profit of ` 50,000 3,34,000 + 50,000 3,84,000 Expected sales in units 24,000 units Required contribution per unit 3,84,000/24,000 16 per unit Target Variable cost per unit = Target price – Required contribution per unit = ` 32 – ` 16 = ` 16 Target Labor cost per unit = Target Variable cost per unit – (Direct Material and Overhead cost) = ` 16 – (` 8 + ` 1) = ` 7 per unit Wage rate per hour = ` .4
Block III: Management Accounting 90 Number of labor hours required per unit = ` 7/` 4 = 1.75 hours.
Therefore, the work force should be able to reduce the time taken to make each unit of the product from 3 hours to 1.75 hours. Check Your Progress - 2 6. Which of the following factors need to be considered in a make or buy decision? a. The capability of the company to make the item in terms of capacity. b. The availability of outside suppliers who can deliver the same in terms of quantity, time and quality. c. The opportunity cost of using existing capacity to manufacture alternative items, which would make a greater contribution. d. The differential cost of making and buying the item. e. The capability to make the item, availability of suppliers , the opportunity cost and differential cost involved in making the item. 7. While deciding about replacement of capital equipment, the firm should take into consideration a. The resultant savings in operating costs. b. The incremental investment in the new equipment c. The benefits the firm is likely to derive in the long run d. The incremental investment and the benefits the firm is likely to derive in the long run. e. The resultant savings, incremental investment and the benefits the firm is likely to derive. 8. Which of the following is not a pricing model? a. Fixed cost based pricing b. Full cost based pricing c. Return on investment pricing d. Marginal cost based pricing e. Differential cost based pricing 9. Which of the following pricing method is generally followed by government organizations? a. Fixed cost based pricing b. Full cost based pricing c. Return on investment pricing d. Marginal cost based pricing e. Differential cost based pricing

Unit 8: Cost Analysis and Decision Making 91 10. Which of the following refers to a cost management tool that reduces the overall cost of a product during its entire life cycle by using production, engineering and R&D? a. Differential Costing b. Target Costing c. Marginal Costing d. Unit Costing e. Process Costing Activity 8.2 A company XYZ Ltd., has the production capacity of 1,00,000 units and currently selling 40,000 units at ` 100 per unit. The demand can make fluctuations in the selling prices. It has been observed that demand increases in two folds with every reduction of ` 10 in selling price. Find out the target cost at full capacity if profit margin on sales is taken as 30%. 8.17 Summary ? Decision-making is an integral part of all management functions. It is the process of choosing among alternative courses of action. Managers have to spend a considerable amount of time and thought in making decisions. ? Costs, which affect the managerial decisions, are called relevant costs. All types of costs are not relevant. Only the costs, which are futuristic in nature and differ among alternatives, are considered as relevant costs. ? Differential cost analysis or differential costing is a special technique to help management take decision. It
shows how costs and revenues would be different under different alternative courses of action. ?
With the help of techniques like marginal costing, CVP analysis and differential analysis, the management makes decisions like determination of profitable levels of production, whether to make or purchase, to process or sell, to purchase or lease, to accept or reject new orders etc. ? Marketing refers to the promotion of products, especially advertising and branding. But marketing includes product management, pricing, promotion and distribution of a product or a service.
Block III: Management Accounting 92 ? Under
normal circumstances, the prices are based upon total cost of sales so as to cover both fixed as well as variable costs and, in addition, to provide for certain desired margin of profit. Sometimes it may become necessary to reduce the selling prices to the level of marginal cost or even below the marginal cost. ? Target cost is the estimated cost of a product that enables a company to remain and compete in the market in the long run. Target costing is a method of costing which is intended to reduce cost, where such reduction is aimed at the entire life cycle of any product. 8.18 Glossary Contribution is the excess of selling price over variable costs. It represent the surplus that can be used to cover fixed costs. Cost Plus Pricing is a pricing method in which a predetermined markup is applied to a cost base to determine the target-selling price. Decision-making is the process of choosing between alternative courses of action. Decremental Cost is decrease in relevant cost as a result of decision. Differential Cost is any cost that differs between alternatives in a decision- making situation. Differential Revenue is the difference in revenue between any two alternatives. Incremental Cost is increase in cost as a result of decision in addition to the relevant cost. Incremental Profit is difference between the incremental revenue and incremental cost. Incremental Revenue is increase in revenue as a result of decision in addition to the regular income. Irrelevant costs are those costs which will not be affected by any decision made by the management. Marginal Costing is a method of costing that deals with decision making on the basis of marginal or variable costs. Under marginal costing, all the costs are segregated into variable costs, fixed costs and semi-variable or semi-fixed costs. Decisions are taken by ascertaining contribution.
Margin of Safety represents the difference between the sales at break-even point
and the total sales. It can be expressed as a percentage as well as in value. The size of the margin of the safety shows the strength of the business. Opportunity Cost is the gain foregone by giving up the next best alternative. Pricing is the process of determination of selling price for a product or service produced in the organization.
Unit 8: Cost Analysis and Decision Making 93
Relevant Costs are costs which are relevant for decision-making or which have considerable effect on decision. Return on Investment Pricing aids management in ascertaining its performance by knowing what selling price would provide a given rate of return on investment. Target Costing is a customer-oriented technique that is widely used by Japanese companies. The target costing process is a logical outgrowth of determining the causes of cost and seeking ways to reduce or eliminate those costs before production costs were incurred, while simultaneously looking to improve quality and customer satisfaction. 8.19 Self-Assessment Test 1. Explain various steps in the decision-making process. 2. Briefly explain the various types of decisions taken by the management with the help of differential cost analysis. 3. What is relevant cost? Explain its characteristics. 4. 'Costs are the base for pricing decisions.' Explain the role of costs in pricing decisions. 5. Discuss any three methods of pricing a product. 8.20
Suggested Readings/Reference Material 1.

90% **MATCHING BLOCK 34/35** W

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Kalyani Publishers, 2020. 2. Mukherjee Amitabha, and Mohammed Hanif. Modern Accountancy. Vol. 1&2. 3rd ed. New Delhi: Tata McGraw Hill Publishing, 2018. 3. T.S. Grewal et.al, Double Entry System of Book Keeping, Sultan Chand, 2021. 4. R. Narayanaswamy. Financial Accounting: A Managerial Perspective. 6th edition. PHI Publishing, 2017. 5. S.N. Maheshwari, Suneel K Maheshwari et.al. Financial Accounting. 6th edition. Vikas Publishing House. 2018. 6. David Spiceland et.al. Financial Accounting. 5th edition. McGraw Hill. 2019. 7. N. Ramachandran and Ram Kumar Kakani. How to Analyze Financial Statements. 2nd edition. McGraw Hill Education India. 2019. 8. Robert N. Anthony et.al. Accounting: Text and Cases. 13th edition. McGraw Hill. 2019.Thomas R. Ittelson. Financial Statements: A Step-by- Step Guide to Understanding and Creating Financial Reports. Pan Macmillan India. 2017. 9. Aswath Damodaran. Narrative and Numbers: The Value of stories in Business. 2017.
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the change in the
cost
due to change in the level of activity or pattern or method of production.
It is
a future cost and does not include all variable costs. 4. (c) Out-of-Pocket costs
There are certain costs, which require cash payment to be made (
like salaries and
wages, rent) whereas many costs do not require cash outlay (like depreciation). Out-of-pocket costs involve cash outlays or require the utilization of current resources.
Unit 8: Cost Analysis and Decision Making 95 5. (

e) Both techniques are used for long-term decision-making While differential costing can be used for short-term and long-term decision-making, marginal costing is used for short-term and medium term decision making. 6. (e) The capability to make the item, availability of suppliers, the opportunity cost and differential cost involved in making the item. Make or buy decision is important for any company. So, before taking any decision one should consider certain things as: ? The capacity of the company in terms of people, plant, space etc., to achieve the required quantity and quality. ? The differential cost of making or buying the item. ? The opportunity cost of using existing capacity to manufacture alternative items. ? The level of variable overheads, which are charged to the item. 7. (e) The resultant savings, incremental investment and the benefits the firm is likely to derive. In case of capital investment decision, the company management will consider two alternatives: (a) whether the asset should be purchased, or (b) it should be leased. For the decision-making purpose, the total cost of the two alternatives will be compared to know the additional savings. 8. (a) Fixed cost based pricing The pricing methods are cost plus pricing, contribution margin pricing, return on investment pricing, full cost pricing and differential cost pricing 9. (b) Full cost based pricing Government organizations usually follow full cost pricing method. Under this method, the price is determined to cover all the cost and a predetermined percentage of profit. It takes full costs into consideration. It is also referred to as cost plus pricing method. 10. (b) Target Costing

Target costing is defined as "a cost management tool for reducing the overall cost of a product over its entire life cycle with the help of the production, engineering, R&D."

Foundations of Accounting & Finance Course Components I Fundamentals of Financial Accounting 1. Introduction to Financial Statements 2. Conceptual Framework of Financial Accounting 3. Elements of Financial Statements II Financial Statements and Analysis 4. Financial Statements of Companies 5. Introduction to Financial Statement Analysis 6. Financial Ratio Analysis III Management Accounting 7. Basic Cost Terms and Concepts 8. Cost Analysis and Decision Making IV Financial Management 9. Introduction to Financial Management 10. Financial Management Process 11. Financial System – Indian and International Scenario 12. Time Value of Money 13. Sources of Short Term and Long Term Finance 14. Basics of International Trade and Finance

Hit and source - focused comparison, Side by Side

Submitted text As student entered the text in the submitted document.

Matching text As the text appears in the source.

1/35	SUBMITTED TEXT	45 WORDS	84%	MATCHING TEXT	45 WORDS
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W https://resource.cdn.icai.org/55939asb45327.pdf

2/35	SUBMITTED TEXT	133 WORDS	94%	MATCHING TEXT	133 WORDS

The concept is used when there are multiple possible options to pursue, and a choice must be made to select one option and drop the others. The concept can be particularly useful in step costing situations, where producing one additional unit of output may require a substantial additional cost. Here are two examples: Example of alternative decisions. If you have a decision to run a fully automated operation that produces 100,000 widgets per year at a cost of Rs1,200,000, or of using direct labor to manually produce the same number of widgets for Rs1,400,000, then the differential cost between the two alternatives is Rs200,000. Example of change in output. A work center can produce 10,000 widgets for Rs29,000 or 15,000 widgets for Rs40,000. The differential cost of the additional 5,000 widgets is

The concept is used when there are multiple possible options to pursue, and a choice must be made to select one option and drop the others. The concept can be particularly useful in step costing situations, where producing one additional unit of output may require a substantial additional cost. Here are two examples: • Example of alternative decisions. If you have a decision to run a fully automated operation that produces 100,000 widgets per year at a cost of $1,200,000, or of using direct labor to manually produce the same number of widgets for $1,400,000, then the differential cost between the two alternatives is $200,000. • Example of change in output. A work center can produce 10,000 widgets for $29,000 or 15,000 widgets for $40,000. The differential cost of the additional 5,000 widgets is $11,000.

W https://www.accountingtools.com/articles/what-is-a-differential-cost.html

3/35	SUBMITTED TEXT	62 WORDS	93%	MATCHING TEXT	62 WORDS

Particulars Total Cost (`) Cost per unit (`) Direct Materials Direct Labour Direct Expenses Prime Cost Add: Works Overheads Works Cost Add: Administration Overheads Cost of Production Add: Selling and Distribution Overheads Total Cost or Cost of Sales

Particulars Total Cost cost per unit ` ` Direct Materials Direct Labour Direct (or Chargeable) Prime cost Add: Works Overheads Works Cost Add: Administrative Overheads Cost of Production Add: Selling and Distribution Overheads Total Cost or Cost of Sales *

W https://www.icsi.edu/WebModules/Publications/FULL_BOOK_PP-CMA-2017-JULY_4.pdf

4/35	SUBMITTED TEXT	36 WORDS	70%	MATCHING TEXT	36 WORDS

change in costs due to change in the level of activity or pattern or method of production they are known as differential costs. If the change increases the cost, it will be called incremental cost

SA Accounting - PW - Final.docx (D19831951)

5/35	SUBMITTED TEXT	27 WORDS	88%	MATCHING TEXT	27 WORDS

xxx xxx Add: Opening Stock of Work-in-Progress xxx xxx Less: Closing Stock of Work-in-Progress xxx Factory or Manufacturing or Works Cost xxx

XXX XXX Add Opening stock of work in progress XXX --- XXX Less Closing stock of work in progress XXX --- cost or works cost XXX

W https://gacbe.ac.in/pdf/ematerial/18BCO51C-U4.pdf

6/35	SUBMITTED TEXT	38 WORDS	82%	MATCHING TEXT	38 WORDS

Following information has been obtained from the records of a manufacturing company: Particulars 1-1-20xx 31-12-20 xx ` ` Stock of Raw Materials 50,000 60,000 Stock of Finished Goods 1,00,000 1,50,000 Stock of Work-in-Progress 13,000 16,000

Following information has been obtained from the records of a Manufacturing Company. 1.1.2003 (in Rs.) 31.12.2003 (in Stock of Raw Materials 40,000 50,000 Stock of Finished Goods 1,00,000 1,5000 Stock of Work-in-Progress 10,000 14,000 - 12 -

W https://gacbe.ac.in/pdf/ematerial/18BCO51C-U4.pdf

7/35	SUBMITTED TEXT	39 WORDS	94%	MATCHING TEXT	39 WORDS

Lubricants 12,000 Power 20,000 Insurance on Plant 4,000 Direct Labour 2,00,000 Purchase of Raw Materials 3,00,000 Depreciation on Machinery 40,000 Sales Commission 72,000 Factory Rent 50,000 Salaries of Salesmen 90,000 Property Tax on Factory Building 14,000

Lubricants 10,000 Power 30,000 Insurance on Plant 3,000 Direct Labour 3,00,000 Purchase of raw materials 4,00,000 Depreciation on Machinery 50,000 Sale Commission 60,000 Factory Rent 60,000 Salaries of Salesmen 1,00,000 Property tax on factory building 11,000

W https://gacbe.ac.in/pdf/ematerial/18BCO51C-U4.pdf

8/35	SUBMITTED TEXT	51 WORDS	85%	MATCHING TEXT	51 WORDS

Opening Stock of Raw Materials 50,000 Add: Purchase of Raw Materials 3,00,000 3,50,000 Less: Closing Stock of Raw Materials 60,000 Cost of Raw Materials Consumed 2,90,000 Direct Labour 2,00,000 Prime Cost 4,90,000 Factory Overheads: (

Opening Stock of Raw Materials 4,50,000 450.00 Add: Purchase of Raw Materials 7,00,000 700.00 Less: Closing Stock of Raw Materials (5,00,000) 500.00 Raw Materials Consumed 6,50,000 650.00 Direct Labour 4,00,000 400.00 PRIME COST 1,000 10,50,000 1,050.00 Add: Works/Factory Overheads:

W http://www.himpub.com/documents/Chapter1448.pdf

9/35	SUBMITTED TEXT	145 WORDS	59%	MATCHING TEXT	145 WORDS

Add: Opening Work-in-Progress 13,000 7,03,000 Less: Closing Work-in-Progress 16,000 Factory (Manufacturing) Cost 6,87,000 Add: Administration Expenses 1,50,000 Cost of Production 8,37,000 Add: Opening Stock of Finished Goods 1,00,000 Cost of Goods Available for Sale 9,37,000 Less: Closing Stock of Finished Goods 1,50,000 Cost of Goods Sold 7,87,000 Sales Commission 72,000 Salaries of Salesmen 90,000 Carriage Outward 20,000 1,82,000 Cost of Sales 9,69,000 Profit 42,000 Sales 10,11,000

Add:- Opening of work in progress Total goods processed during the period 4,79,000 Less:- closing stock of work in progress 48,000 Factory work cost 4,31,000 17,240 Add:- General & administrative expenses (4% of cost) Cost of production 4,48,240 40,000 Add:- opening stock of finished goods Cost of goods available for sale 4,88,240 55,000 Less:- closing stock of finished goods Cost of goods sold 4,33,240 21,662 Add:- and distribution expenses (5% of production Cost of sales 4,54,902 1,13,726 Add:- Profit (20% on sales

W https://josephscollege.ac.in/lms/Uploads/pdf/material/BBA_CA_LECTURENOTES.pdf

10/35	SUBMITTED TEXT	36 WORDS	88%	MATCHING TEXT	36 WORDS

Purchase of raw materials 1, 30,000 Direct wages 1,00,000 Rent, rates, insurance and works on cost 45,000 Carriage inwards 1,500 Stock on 1-1-20xx Raw materials 20,000 Finished products (1,600 tonnes) 17,600 Stock on 30-6-20

Purchase of raw materials 1,30,000 Direct wages 1,00,000 Rent, rates, insurance and works on cost 45,000 Carriage inward 1,500 Stock on 1-1-2014 Raw materials 20,000 Finished products (1,600 tonnes) 17,600 Stock on 30-6-2014

W http://www.himpub.com/documents/Chapter1448.pdf

11/35	SUBMITTED TEXT	54 WORDS	46%	MATCHING TEXT	54 WORDS

for the Period Ending 30-6-20xx Particulars ` ` Raw materials: Opening stock 20,000 Add: Purchases 1,30,000 1,50,000 Less: Closing stock 25,000 1,25,000 Add: Carriage inwards 1,500 Material consumed 1,26,500 Direct wages 1,00,000 Prime cost 2,26,500 Rent, rates, insurance

for the year ending 31st Dec., 2013 Raw Materials: Opening Stock 1,000 ` Add: Purchases 6,000 Add: Carriage Inwards 100 7,100 Less: Closing Stock 1,100 Cost of materials consumed 6,000 Direct wages 5,000 Prime Cost 11,000 Factory Overheads : Rent, insurance,

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12/35	SUBMITTED TEXT	90 WORDS	100%	MATCHING TEXT	90 WORDS

Factory supervision 10,000 55,000 Add: Opening Work-in-progress 4,500 2,86,000 Less: Closing Work-in-progress 16,000 Factory Cost 2,70,000 Add: Opening stock of finished goods (1,600 tonnes) 17,600 2,87,600 Less: Closing stock of finished goods (3,200 tonnes) 37,600 Cost of goods sold 2,50,000 Add: Advertising and selling cost @

factory supervision 10,000 55,000 Add: Opening Work-in-progress 4,500 Less: Closing Work-in-progress (16,000) Factory Cost 2,70,000 Add: Opening stock of finished goods (1,600 tonnes) 17,600 Less: Closing stock of finished goods (3,200 tonnes) (37,600) Cost of goods sold 2,50,000 Add: Advertising and selling cost @ ` 0.50

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13/35	SUBMITTED TEXT	20 WORDS	100%	MATCHING TEXT	20 WORDS

Goods sold 25,000 Add: Closing stock of finished goods 3,200 28,200 Less: Opening stock of finished goods 1,600

Goods Sold 56,000 Add : Closing stock of finished goods 18,000 74,000 Less : Opening stock of finished goods. 14,000

W https://www.himpub.com/documents/Chapter1133.pdf

14/35 **SUBMITTED TEXT** 25 WORDS **85%** **MATCHING TEXT** 25 WORDS

Opening Stock of Raw Materials xxx Add: Purchases of Raw Materials xxx xxx Less: Closing Stock of Raw Materials xxx

SA Unit 2.docx (D110981204)

15/35 **SUBMITTED TEXT** 40 WORDS **100%** **MATCHING TEXT** 40 WORDS

Direct labour cost ` 25,000 (165% of factory overhead) Cost of goods sold ` 76,000 Inventory accounts showed these opening and closing

SA Cost Accounting Unit ! for checking.docx (D67919053)

16/35 **SUBMITTED TEXT** 23 WORDS **100%** **MATCHING TEXT** 23 WORDS

Opening Stock of Raw Materials 12,000 Add: Purchase of Raw Materials 40,849 52,849 Less: Closing Stock of Raw Materials 12,600

Opening Stock of Raw Materials 4,50,000 450.00 Add: Purchase of Raw Materials 7,00,000 700.00 Less: Closing Stock of Raw Materials (5,00,000) 500.00

W http://www.himpub.com/documents/Chapter1448.pdf

17/35 **SUBMITTED TEXT** 111 WORDS **52%** **MATCHING TEXT** 111 WORDS

Materials Consumed 40,249 Direct Labour Cost 25,000 Prime Cost 65,249 Factory Overheads (100 x Rs.25,000 165 ? ? ? ? ? ? 15,151 80,400 Add: Work-in-progress 11,000 91,400 Less: Work-in-progress 16,000 Works Cost 75,400 Add: General and Administration Expenses 4,600 Cost of Goods Manufactured 80,000 Add: Opening Stock of Finished Goods 17,000 97,000 Less: Closing stock of Finished Goods 21,000 Cost of Goods Sold 76,000 Add: Selling Expenses 3,400 Cost of Sales 79,400 Profit 70,600 Sales 1,50,000

Materials consumed 35,400 Direct labour cost 16,000 Prime Cost 51,400 Factory overhead 10,000 61,400 Add: work-in-progress 8,000 69,400 Less: Closing in-progress 12,000 Cost 57,400 General expenses 2,600 Cost of Add: Opening stock of finished goods 14,000 74,000 Less: Closing stock of finished goods 18,000 Cost of Selling expenses 3,400 Cost of Sales 59,400 Profit 15,600 Sales 75,000

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18/35	SUBMITTED TEXT	129 WORDS	60%	MATCHING TEXT	129 WORDS

Cost of Goods Sold 76,000 Add: Closing Stock of Finished Goods 21,000 97,000 Less: Beginning Stock of Finished Goods 17,000 Cost of Production 80,000 Less: General and Administration Expenses 4,600 Works Cost 75,400 Add: Work-in-progress (closing) 16,000 91,400 Less: Work-in-progress (beginning) 11,000 80,400 Less: Factory Overheads 15,151 Block III: Management Accounting 30 Prime Cost 65,249 Less: Direct Labour 25,000 Materials Consumed 40,249 Add: Closing Stock of Raw Materials 12,600 52,849 Less: Beginning Stock of Raw Materials 12,000

Cost of Goods Sold 56,000 Add : Closing stock of finished goods 18,000 74,000 Less : Opening stock of finished goods. 14,000 Cost of Production 60,000 Less : General administrative expenses 2,600 Factory Cost 57,400 Add : Closing stock of work-in-progress 12,000 69,400 Less : Opening stock of work-in-progress 8,000 61,400 Less : Factory overhead 16000 100 160 , ? F G I K J 10,000 Prime Cost 51,400 Less : Labour cost 16,000 Materials Consumed 35,400 Add : Closing stock of raw materials 8,600 44,000 Less : Opening stock of raw materials 8,000

W https://www.himpub.com/documents/Chapter1133.pdf

19/35	SUBMITTED TEXT	36 WORDS	77%	MATCHING TEXT	36 WORDS

To Direct Materials xxx By Prime Cost c/d (Balancing figure) xxx To Direct Labour xxx To Direct Expenses xxx To Prime Cost b/d xxx By

To Direct Material xxx By Prime Cost c/d xxx To Direct Labour xxx To Direct Expenses _____ _____ _____ _____ To Prime Cost b/d xxx By

W https://cbseacademic.nic.in/web_material/Curriculum/Vocational/2018/Accounting%20and%20Taxation/C ...

20/35	SUBMITTED TEXT	57 WORDS	57%	MATCHING TEXT	57 WORDS

xxx To Opening Work-in- progress xxx By Cost of Goods Manufactured c/d (Balancing figure) To Cost of Goods Manufactured b/d xxx By Sales xxx To

xxx To Opening Stock of Finished xxx Finished Goods Goods _____ By Cost of Goods Sold c/d _____ _____ _____ To Cost of Goods Sold b/d xxx By Sales xxx To

W https://cbseacademic.nic.in/web_material/Curriculum/Vocational/2018/Accounting%20and%20Taxation/C ...

21/35	SUBMITTED TEXT	39 WORDS	54%	MATCHING TEXT	39 WORDS

By Closing Stock of Finished Goods xxx To Gross Profit c/d (Balancing figure) xxx To Administration xxx By Gross Profit b/d

By Closing stock of finished goods — To Gross Profit c/d — _____ — — To Administration overhead — By Gross Profit b/d —

W https://www.icsi.edu/WebModules/Publications/FULL_BOOK_PP-CMA-2017-JULY_4.pdf

22/35	SUBMITTED TEXT	53 WORDS	55%	MATCHING TEXT	53 WORDS

Stock of Raw Materials 75,000 91,500 Stock of Finished Goods 54,000 31,000 Stock Work-in-Progress 28,000 35,000 Particulars ` Particulars ` Purchase of Materials 66,000 Sundry Factory Expenses 10,000 Direct Wages 52,500 Office Rent and Rates 9,000

Stock of Raw Materials 30,000 35,000 Stock of Finished Goods 15,000 20,000 Stock of Work-in-Progress 43,700 54,000 Indirect Wages 9,720 Purchase of Raw Materials 1,20,000 Sales 3,25,000 Productive wages 90,000 Factory Rent and Rates 7,830

W https://gacbe.ac.in/pdf/ematerial/18BCO51C-U4.pdf

23/35	SUBMITTED TEXT	35 WORDS	83%	MATCHING TEXT	35 WORDS

Selling expenses 3,400 General and administration expenses 4,600 Sales for the month 1,50,000 You are required to prepare statement showing cost of goods manufactured and sold and profit earned. Solution Statement of Cost

SA Cost Accounting Unit ! for checking.docx (D67919053)

24/35	SUBMITTED TEXT	36 WORDS	70%	MATCHING TEXT	36 WORDS

To Direct Materials Purchased 66,000 By Prime Cost C/d (Balancing figure) 1,02,000 To Direct Labour 52,500 1,93,500 1,93,500 To Prime Cost b/d 1,02,000 By

To Direct materials — By Prime Cost c/d — To Direct labour — To Direct expense — _____ _____ — — To Prime Cost b/d — By

W https://www.icsi.edu/WebModules/Publications/FULL_BOOK_PP-CMA-2017-JULY_4.pdf

25/35	SUBMITTED TEXT	68 WORDS	87%	MATCHING TEXT	68 WORDS

To Cost of Goods Manufactured b/d 1,26,250 By Sales 2,11,000 To Opening Stock of Finished Goods 54,000 By Closing Stock of Finished Goods 31,000 To Gross Profit c/d (Balancing figure) 61,750 2,42,000 2,42,000 To Administration Overheads By Gross Profit b/d 61,750 –

To Cost of goods manufactured b/d — By Sales — To Opening stock of finished goods — By Closing stock of finished goods — To Gross Profit c/d — _____ — — To Administration overhead — By Gross Profit b/d —

W https://www.icsi.edu/WebModules/Publications/FULL_BOOK_PP-CMA-2017-JULY_4.pdf

26/35	SUBMITTED TEXT	39 WORDS	45%	MATCHING TEXT	39 WORDS

Stock of finished goods on 31-12-20xx 1,36,500 Stock of raw materials on 1-1-20xx 58,240 Stock of raw materials on 31-12-20xx 61,880 Purchase of raw materials 13,28,600 Works overhead charges 2,26,135 Sale of finished goods 26,93,600 Office and general

Stock of finished goods 72,800 on March 31, 2014 Stock of raw materials 35,360 Stock of goods 78,000 Purchase of raw materials 7,59,200 Sale of finished goods 15,39,200 Productive wage 5,16,880 Works overhead charges 1,29,220 Office and general

W https://www.himpub.com/documents/Chapter1133.pdf

27/35	SUBMITTED TEXT	32 WORDS	71%	MATCHING TEXT	32 WORDS

materials 91,000 Wages 54,600 Prime cost 1,45,600 Works overheads (25% of wages) 13,650 Works cost 1,59,250 Office and general expenses (5% of works cost) 7,963 Cost of production 1,67,213 Profit (1/4

Materials (15,000 × 9) + 10% = 1,48,500 1,48,500 9.90 Wages (15,000 × 6) + 10% = 99,000 99,000 6.60 Prime Cost 2,47,500 16.50 *Factory overheads (75% of wages) 74,250 4.95 Works Cost 3,21,750 21.45 *Office and selling overheads (20% of works cost) 64,350 4.29 Cost of Sales 3,86,100 25.74 Profit 78,900 5.26

W https://www.himpub.com/documents/Chapter1133.pdf

28/35	SUBMITTED TEXT	40 WORDS	42%	MATCHING TEXT	40 WORDS

Solution Statement of Cost Particulars ` Raw materials (opening stock) 58,240 Add: Purchase of raw materials 13,28,600 13,86,840 Less: Raw materials (closing stock) 61,880 a. Materials consumed 13,24,960 Productive wages 9,04,540 b. Prime Cost 22,29,500

SA Cost Accounting Unit ! for checking.docx (D67919053)

29/35	SUBMITTED TEXT	10 WORDS	90%	MATCHING TEXT	10 WORDS

Jain, S.P., and Narang, K.L. Financial Accounting. New Delhi:

Jain, S.P., and Narang, K.L. Financial Accounting, Kalyani Publishers, New Delhi.

W https://doonuniversity.ac.in/admin/assets/uploads/syllabus/Doon%20Merged%20Syllabus.pdf

30/35	SUBMITTED TEXT	37 WORDS	58%	MATCHING TEXT	37 WORDS

Opening stock of material 1,00,000 Add: Purchase of material 1,50,000 2,50,000 Less: Closing stock of material 14,000 Material used 2,36,000 118.00 Direct wages 3,00,000 150.00

SA Cost Accounting Unit ! for checking.docx (D67919053)

31/35	SUBMITTED TEXT	17 WORDS	55%	MATCHING TEXT	17 WORDS

one price for the developed markets but another lower price for the middle-income and low-income countries,

one price for the developed world based on their GDP, another price, lower for the middle-income countries and in the low-income countries,

W https://www.livemint.com/science/health/covid-19-vaccine-to-have-differential-pricing-for-differe ...

32/35	SUBMITTED TEXT	12 WORDS	100%	MATCHING TEXT	12 WORDS

Covid 19 vaccine to have differential pricing for different countries: Pfizer.

Covid-19 vaccine to have differential pricing for different countries: Pfizer |

W https://www.livemint.com/science/health/covid-19-vaccine-to-have-differential-pricing-for-differe ...

33/35	SUBMITTED TEXT	1 WORDS	100%	MATCHING TEXT	1 WORDS

science/health/covid-19-vaccine-to-have-differential-pricing-for-different-countries-pfizer-11607521199878.

Science / Health / Covid-19 vaccine to have differential pricing for different countries: Pfizer

W https://www.livemint.com/science/health/covid-19-vaccine-to-have-differential-pricing-for-differe ...

34/35	SUBMITTED TEXT	10 WORDS	90%	MATCHING TEXT	10 WORDS

Jain, S.P., and Narang, K.L. Financial Accounting. New Delhi:

Jain, S.P., and Narang, K.L. Financial Accounting, Kalyani Publishers, New Delhi.

W https://doonuniversity.ac.in/admin/assets/uploads/syllabus/Doon%20Merged%20Syllabus.pdf

35/35	SUBMITTED TEXT	30 WORDS	87%	MATCHING TEXT	30 WORDS

shutdown point: Shutdown point = Total fixed cost – Shutdown cost/Contribution per unit = ` 2,40,000 – ` 1,26,000/` 20 – ` 13 = 16,285

SA MBAFT-6205 Management Accounting.pdf (D164622147)