

**ACCOUNTING FOR
MANAGERS**

SRINIVAS R. RAO

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BOOK WRITTEN BY SRINIVAS R RAO FOR MASTER OF BUSINESS ADMINISTRATION

Accounting For Managers

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CHAPTER – I: Basics of Accounting

Lesson – 1.1 Accounting – An Introduction

1.1.1 Introduction

Accounting is aptly called the language of business. This designation is applied to accounting because it is the method of communicating business information. The basic function of any language is to serve as a means of communication. Accounting duly serves this function. The task of learning accounting is essentially the same as the task of learning a new language. But the acceleration of change in business organization has contributed to increase the complexities in this language. Like other languages, it is undergoing continuous change in an attempt to discover better means of communications. To enable the accounting language to convey the same meaning to all stakeholders, it should be made standard. To make it a standard language certain accounting principles, concepts and standards have been developed over a period of time. This lesson dwells upon the different dimensions of accounting, accounting concepts, accounting principles and the accounting standards.

1.1.2

Know the Evolution of Accounting

Understand the Definition of Accounting

Comprehend the Scope and Function of Accounting

Ascertain the Users of Accounting Information

Know the Specialized Accounting Fields

Understand the Accounting Concepts and Conventions

Realize the Need for Accounting Standards

1.1.3 CONTENTS:

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1.1.3.1 Evolution Of Accounting

Accounting is as old as money itself. It has evolved, as have medicine, law and most other fields of human activity in response to the social and economic needs of society. People in all civilizations have maintained various types of records of business activities. The oldest known are clay tablet records of the payment of wages in Babylonia around 600 B.C. Accounting was practiced in India twenty-four centuries ago as is clear from Kautilya's book 'Arthashastra' which clearly indicates the existence and need of proper accounting and audit.

For the most part, early accounting dealt only with limited aspects of the financial operations of private or governmental enterprises.

Complete accounting system for an enterprise which came to be called as "double entry system" was developed in Italy in the 15th century. The first known description of the system was published there in 1494 by a Franciscan monk by the name Luca Pacioli.

The expanded business operations initiated by the industrial revolution required increasingly large amounts of money which in turn resulted in the development of the corporation form of organizations.

As corporations became larger, an increasing number of individuals and institutions looked to accountants to provide economic information about these enterprises. For e.g. Prospective investors and creditors sought information about a corporation's financial status. Government agencies required financial information for purposes of taxation and regulation.

Thus accounting began to expand its function of meeting the needs of

relatively few owners to a public role of meeting the needs of a variety of interested parties.

1.1.3.2 Book Keeping And Accounting

Book-keeping is that branch of knowledge which tells us how to keep a record of business transactions. It is considered as an art of recording systematically the various types of transactions that occur in a business concern in the books of accounts. According to spicer and pegler, “book-keeping is the art of recording all money transactions, so that the financial position of an undertaking and its relationship to both its proprietors and to outside persons can be readily ascertained”. Accounting is a term which refers to a systematic study of the principles and methods of keeping accounts. Accountancy and book-keeping are related terms; the former relates to the theoretical study and the latter refers to the practical work.

1.1.3.3 Definition Of Accounting

Before attempting to define accounting, it may be made clear that there is no unanimity among accountants as to its precise definition.

Anyhow let us examine three popular definitions on the subject:

Accounting has been defined by the american accounting association committee as:

“the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information”. This may be considered as a good definition because of its focus on accounting as an aid to decision making.

The American Institute of Certified and Public Accountants Committee

on terminology defined accounting as:(AICPAC DEFINITION)

“accounting is the art of recording, classifying and summarizing, in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character and interpreting the results thereof ”. of all definitions available, this is the most acceptable one because it encompasses all the functions which the modern accounting system performs.

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Another popular definition on accounting was given by american accounting principles board in 1970, which defined it as:

“accounting is a service society. Its function is to provide quantitative information, primarily financial in nature, about economic entities that is useful in making economic decision, in making reasoned choices among alternative courses of action”.

This is a very relevant definition in a present context of business units facing the situation of selecting the best among the various alternatives available. The special feature of this definition is that it has designated accounting as a service activity.

1.1.3.4 Scope And Functions Of Accounting

Individuals engaged in such areas of business as finance, production, marketing, personnel and general management need not be expert accountants but their effectiveness is no doubt increased if they have a good understanding of accounting principles. Everyone engaged

in business activity, from the bottom level employee to the chief executive and owner, comes into contact with accounting. The higher the level of authority and responsibility, the greater is the need for an understanding of accounting concepts and terminology.

A study conducted in United States revealed that the most common background of chief executive officers in United States corporations was finance and accounting. Interviews with several corporate executives drew the following comments:

“..... my training in accounting and auditing practice has been extremely valuable to me throughout”. “a knowledge of accounting carried with it understanding of the establishment and maintenance of sound financial controls- is an area which is absolutely essential to a chief executive officer” .

Though accounting is generally associated with business, it is not only business people who make use of accounting but also many individuals in non-business areas that make use of accounting data and need to understand accounting principles and terminology. For e.g. An engineer responsible for selecting the most desirable solution to a technical

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manufacturing problem may consider cost accounting data to be the decisive factor. Lawyers want accounting data in tax cases and damages from breach of contract. Governmental agencies rely on an accounting data in evaluating the efficiency of government operations and for approving the feasibility of proposed taxation and spending programs. Accounting

thus plays an important role in modern society and broadly speaking all citizens are affected by accounting in some way or the other.

Accounting which is so important to all, discharges the following vital functions:

1.Keeping Systematic Records:

This is the fundamental function of accounting. The transactions of the business are properly recorded, classified and summarized into final financial statements – income statement and the balance sheet.

2.Protecting The Business Properties:

The second function of accounting is to protect the properties of the business by maintaining proper record of various assets and thus enabling the management to exercise proper control over them.

3.Communicating The Results:

As accounting has been designated as the language of business, its third function is to communicate financial information in respect of net profits, assets, liabilities, etc., to the interested parties.

4.Meeting Legal Requirements:

The fourth and last function of accounting is to devise such a system as will meet the legal requirements. The provisions of various laws such as the companies act, income tax act, etc., require the submission of various statements like income tax returns, annual accounts and so on.

Accounting system aims at fulfilling this requirement of law.

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It may be noted that the functions stated above are those of financial

accounting alone. The other branches of accounting, about which we are going to see later in this lesson, have their special functions with the common objective of assisting the management in its task of planning, control and coordination of business activities. Of all the branches of accounting, management accounting is the most important from the management point of view.

As accounting is the language of business, the primary aim of accounting, like any other language, is to serve as a means of communication.

Most of the world's work is done through organizations – groups of people who work together to accomplish one or more objectives. In doing its work, an organization uses resources – men, material, money and machine and various services. To work effectively, the people in an organization need information about these sources and the results achieved through using them. People outside the organization need similar information to make judgments about the organization. Accounting is the system that provides such information.

Any system has three features, viz., input, processes and output.

Accounting as a social science can be viewed as an information system, since it has all the three features i.e., inputs (raw data), processes (men and equipment) and outputs (reports and information). Accounting information is composed principally of financial data about business transactions. The mere records of transactions are of little use in making “informed judgments and decisions”. The recorded data must be sorted and summarized before significant analysis can be prepared. Some of

the reports to the enterprise manager and to others who need economic information may be made frequently; other reports are issued only at longer intervals. The usefulness of reports is often enhanced by various types of percentage and trend analyses. The “**basic raw materials**” of accounting are composed of business transactions data. Its “primary end products” are composed of various summaries, analyses and reports.

The information needs of a business enterprise can be outlined and illustrated with the help of the following chart:

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Chart Showing Types Of Information

Information

Non-quantitative Quantitative

Information Information

Accounting Non- accounting

Information Information

Operating Financial Management

Cost

Information Information Information Information

The chart clearly presents the different types of information that might be useful to all sorts of individuals interested in the business enterprise. As seen from the chart, accounting supplies the quantitative information. The special feature of accounting as a kind of a quantitative information and as distinguished from other types of quantitative information is that it usually is expressed in monetary terms.

In this connection it is worthwhile to recall the definitions of accounting as given by the American Institute of Certified and Public Accountants and by the American Accounting Principles Board.

The types of accounting information may be classified into four categories: (1) operating information, (2) financial accounting information (3) management accounting information and (4) cost accounting information.

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Operating Information:

By operating information, we mean the information which is required to conduct the day-to-day activities. Examples of operating information are: amount of wages paid and payable to employees, information about the stock of finished goods available for sale and each one's cost and selling price, information about amounts owed to and owing by the business enterprise, information about stock of raw materials, spare parts and accessories and so on. By far, the largest quantity of accounting information provides the raw data (input) for financial accounting, management accounting and cost accounting.

Financial Accounting:

Financial accounting information is intended both for owners and managers and also for the use of individuals and agencies external to the business. This accounting is concerned with the recording of transactions for a business enterprise and the periodic preparation of various reports from such records. The records may be for general purpose or for a special

purpose. A detailed account of the function of financial accounting has been given earlier in this lesson.

Management Accounting:

Management accounting employs both historical and estimated data in assisting management in daily operations and in planning for future operations. It deals with specific problems that confront enterprise managers at various organizational levels. The management accountant is frequently concerned with identifying alternative courses of action and then helping to select the best one. For e.g. The accountant may help the finance manager in preparing plans for future financing or may help the sales manager in determining the selling price to be fixed on a new product by providing suitable data. Generally management accounting information is used in three important management functions: (1) control (2) co-ordination and (3) planning. Marginal costing is an important technique of management accounting which provides multi dimensional information that facilitates decision making.

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Cost Accounting:

The industrial revolution in England posed a challenge to the development of accounting as a tool of industrial management.

This necessitated the development of costing techniques as guides to management action. Cost accounting emphasizes the determination and the control of costs. It is concerned primarily with the cost of manufacturing processes. In addition, one of the principal functions of cost accounting

is to assemble and interpret cost data, both actual and prospective, for the use of management in controlling current operations and in planning for the future.

All of the activities described above are related to accounting and in all of them the focus is on providing accounting information to enable decisions to be made. More about cost accounting can be gained in unit v.

1.1.3.5

Groups Interested In Accounting Information:

OR

USERS OF ACCOUNTING INFORMATION:

There are several groups of people who are interested in the accounting information relating to the business enterprise. Following are some of them:

Shareholders:

Shareholders as owners are interested in knowing the profitability of the business transactions and the distribution of capital in the form of assets and liabilities. In fact, accounting developed several centuries ago to supply information to those who had invested their funds in business enterprise.

Management:

With the advent of joint stock company form of organization the gap between ownership and management widened. In most cases the

Potential Investors:

An individual who is planning to make an investment in a business would like to know about its profitability and financial position. An analysis of the financial statements would help him in this respect.

Creditors:

As creditors have extended credit to the company, they are much worried about the repaying capacity of the company. For this purpose they require its financial statements, an analysis of which will tell about the solvency position of the company.

Government:

Any popular government has to keep a watch on big businesses regarding the manner in which they build business empires without regard to the interests of the community. Restricting monopolies is something that is common even in capitalist countries. For this, it is necessary that proper accounts are made available to the government. Also, accounting data are required for collection of sale-tax, income-tax, excise duty etc.

Employees:

Like creditors, employees are interested in the financial statements in view of various profit sharing and bonus schemes. Their interest may further increase when they hold shares of the companies in which they are employed.

Researchers:

Researchers are interested in interpreting the financial statements of the concern for a given objective.

Citizens:

Any citizen may be interested in the accounting records of business enterprises including public utilities and government companies as a voter and tax payer.

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1.1.3.6 The Profession Of Accounting

Accountancy can very well be viewed as a profession with stature comparable to that of law or medicine or engineering. The rapid development of accounting theory and techniques especially after the late thirties of 20th century has been accompanied by an expansion of the career opportunities in accounting and an increasing number of professionally trained accountants. Among the factors contributing to this growth has been the increase in number, size and complexity of business enterprises, the imposition of new and increasingly complex taxes and other governmental restrictions on business operations.

Coming to the nature of accounting function, it is no doubt a service function. The chief of accounting department holds a staff position which is quite in contra - distinction to the roles played by production or marketing executives who hold line authority. The role of the accountant is advisory in character. Although accounting is a staff function performed by professionals within an organization, the ultimate responsibility for the generation of accounting information, whether financial or managerial, rests with management. That is why one of the top officers of many businesses is the financial controller. The controller is the person responsible for satisfying other managers' demands for management

accounting information and for complying with the regulatory demands of financial reporting. With these ends in view, the controller employs accounting professionals in both management and financial accounting. These accounting professionals employed in a particular business firm are said to be engaged in private accounting. Besides these, there are also accountants who render accounting services on a fee basis through staff accountants employed by them. These accountants are said to be engaged in public accounting.

1.1.3.7 Specialised Accounting Fields

As in many other areas of human activity, a number of specialized fields in accounting also have evolved besides financial accounting. Management accounting and cost accounting are the result of rapid technological advances and accelerated economic growth. The most important among them are explained below:

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Tax Accounting:

Tax accounting covers the preparation of tax returns and the consideration of the tax implications of proposed business transactions or alternative courses of action. Accountants specializing in this branch of accounting are familiar with the tax laws affecting their employer or clients and are up to date on administrative regulations and court decisions on tax cases.

International Accounting:

This accounting is concerned with the special problems associated

with the international trade of multinational business organizations.

Accountants specializing in this area must be familiar with the influences that custom, law and taxation of various countries bring to bear on international operations and accounting principles.

Social Responsibility Accounting:

This branch is the newest field of accounting and is the most difficult to describe concisely. It owes its birth to increasing social awareness which has been particularly noticeable over the last three decades or so. Social responsibility accounting is so called because it not only measures the economic effects of business decisions but also their social effects, which have previously been considered to be immeasurable. Social responsibilities of business can no longer remain as a passive chapter in the text books of commerce but are increasingly coming under greater scrutiny. Social workers and people's welfare organizations are drawing the attention of all concerned towards the social effects of business decisions. The management is being held responsible not only for the efficient conduct of business as reflected by increased profitability but also for what it contributes to social well-being and progress.

Inflation Accounting:

Inflation has now become a world-wide phenomenon. The consequences of inflation are dire in case of developing and underdeveloped countries. At this juncture when financial statements or reports are based on historical costs, they would fail to reflect the effect of changes in

purchasing power or the financial position and profitability of the firm. Thus, the utility of the accounting records, not taking care of price level changes is seriously lost. This imposes a demand on the accountants for adjusting financial accounting for inflation to know the real financial position and profitability of a concern. Thus emerged a future branch of accounting called inflation accounting or accounting for price level changes. It is a system of accounting which regularly records all items in financial statements at their current values.

Human Resources Accounting:

Human resources accounting is yet another new field of accounting which seeks to report and emphasize the importance of human resources in a company's earning process and total assets. It is based on the general agreement that the only real long lasting asset which an organization possesses is the quality and caliber of the people working in it. This system of accounting is concerned with, *“the process of identifying and measuring data about human resources and communicating this information to interested parties”*.

1.1.3.8 Nature And Meaning Of Accounting Principles

What is an accounting principle or concept or convention or standard? Do they mean the same thing? Or does each one has its own meaning? These are all questions for which there is no definite answer because there is ample confusion and controversy as to the meaning and nature of accounting principles. We do not want to enter into this controversial discussion because the reader may fall a prey to the

controversies and confusions and lose the spirit of the subject.

The rules and conventions of accounting are commonly referred to as principles. The American Institute of Certified Public Accountants has defined the accounting principle as, ***“a general law or rule adopted or professed as a guide to action; a settled ground or basis of conduct or practice”***. It may be noted that the definition describes the accounting principle as a general law or rule that is to be used as a guide to action.

The Canadian Institute of Chartered Accountants has defined accounting principles as, ***“the body of doctrines commonly associated with the theory and procedure of accounting, serving as explanation of current practices***

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and as a guide for the selection of conventions or procedures where alternatives exist”. This definition also makes it clear that accounting principles serve as a guide to action.

The peculiar nature of accounting principles is that they are manmade. Unlike the principles of physics, chemistry etc. They were not deduced from basic axiom. Instead they have evolved. This has been clearly brought out by the Canadian Institute of Chartered Accountants in the second part of their definition on accounting principles: ***“rules governing the foundation of accounting actions and the principles derived from them have arisen from common experiences, historical precedent, statements by individuals and professional bodies and regulation of governmental agencies”***. Since the accounting principles are man made they cannot be static and are bound to change in response to the changing needs of the

society. It may be stated that accounting principles are changing but the change in them is permanent.

Accounting principles are judged on their general acceptability to the makers and users of financial statements and reports. They present a generally accepted and uniform view of the accounting profession in relation to good accounting practice and procedures. Hence the name generally accepted accounting principles.

Accounting principles, rules of conduct and action are described by various terms such as concepts, conventions, doctrines, tenets, assumptions, axioms, postulates, etc. But for our purpose we shall use all these terms synonymously except for a little difference between the two terms – concepts and conventions. The term “concept” is used to connote accounting postulates i.e. Necessary assumptions or conditions upon which accounting is based. The term convention is used to signify customs or traditions as a guide to the preparation of accounting statements.

1.1.3.9 Accounting Concepts

The important accounting concepts are discussed hereunder:

Business Entity Concept:

It is generally accepted that the moment a business enterprise is

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started it attains a separate entity as distinct from the persons who own it.

In recording the transactions of a business, the important question is:

How do these transactions affect the business enterprise? The

question as to how these transactions affect the proprietors is quite

irrelevant. This concept is extremely useful in keeping business affairs strictly free from the effect of private affairs of the proprietors. In the absence of this concept the private affairs and business affairs are mingled together in such a way that the true profit or loss of the business enterprise cannot be ascertained nor its financial position. To quote an example, if a proprietor has taken rs.5000/- from the business for paying house tax for his residence, the amount should be deducted from the capital contributed by him. Instead if it is added to the other business expenses then the profit will be reduced by rs.5000/- and also his capital more by the same amount. This affects the results of the business and also its financial position. Not only this, since the profit is lowered, the consequential tax payment also will be less which is against the provisions of the income-tax act.

Going Concern Concept:

This concept assumes that the business enterprise will continue to operate for a fairly long period in the future. The significance of this concept is that the accountant while valuing the assets of the enterprise does not take into account their current resale values as there is no immediate expectation of selling it. Moreover, depreciation on fixed assets is charged on the basis of their expected life rather than on their market values. When there is conclusive evidence that the business enterprise has a limited life, the accounting procedures should be appropriate to the expected terminal date of the enterprise. In such cases, the financial statements could clearly disclose the limited life of the enterprise and should be prepared from the 'quitting concern' point of view rather than from a 'going concern' point of

view.

Money Measurement Concept:

Accounting records only those transactions which can be expressed in monetary terms. This feature is well emphasized in the two definitions on accounting as given by the American Institute of Certified Public Accountants and the American Accounting Principles Board. The

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importance of this concept is that money provides a common denomination by means of which heterogeneous facts about a business enterprise can be expressed and measured in a much better way. For e.g. When it is stated that a business owns rs.1,00,000 cash, 500 tons of raw material, 10 machinery items, 3000 square meters of land and building etc., these amounts cannot be added together to produce a meaningful total of what the business owns. However, by expressing these items in monetary terms such as rs.1,00,000 cash, rs.5,00,000 worth raw materials, rs.10,00,000 worth machinery items and rs.30,00,000 worth land and building – such an addition is possible.

A serious limitation of this concept is that accounting does not take into account pertinent non-monetary items which may significantly affect the enterprise. For instance, accounting does not give information about the poor health of the chairman, serious misunderstanding between the production and sales manager etc., which have serious bearing on the prospects of the enterprise. Another limitation of this concept is that money is expressed in terms of its value at the time a transaction is recorded in the accounts. Subsequent changes in the purchasing power of

money are not taken into account.

Cost Concept:

This concept is yet another fundamental concept of accounting which is closely related to the going-concern concept. As per this concept: (i) an asset is ordinarily entered in the accounting records at the price paid to acquire it i.e., at its cost and (ii) this cost is the basis for all subsequent accounting for the asset.

The implication of this concept is that the purchase of an asset is recorded in the books at the price actually paid for it irrespective of its market value. For e.g. If a business buys a building for rs.3,00,000, the asset would be recorded in the books as rs.3,00,000 even if its market value at that time happens to be rs.4,00,000. However, this concept does not mean that the asset will always be shown at cost. This cost becomes the basis for all future accounting of the asset. It means that the asset may systematically be reduced in its value by changing depreciation. The significant advantage of this concept is that it brings in objectivity in the preparations and presentation of financial statements. But like the money measurement concept, this concept also does not take into account subsequent changes

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in the purchasing power of money due to inflationary pressures. This is the reason for the growing importance of inflation accounting.

Dual Aspect Concept (Double Entry System):

This concept is the core of accounting. According to this concept every business transaction has a dual aspect. This concept is explained in

detail below:

The properties owned by a business enterprise are referred to as assets and the rights or claims to the various parties against the assets are referred to as equities. The relationship between the two may be expressed in the form of an equation as follows:

$$\mathbf{Equities = Assets}$$

Equities may be subdivided into two principal types: the rights of creditors and the rights of owners. The rights of creditors represent debts of the business and are called liabilities. The rights of the owners are called capital.

Expansion of the equation to give recognition to the two types of equities results in the following which is known as the accounting equation:

$$\mathbf{Liabilities + Capital = Assets}$$

It is customary to place 'liabilities' before 'capital' because creditors have priority in the repayment of their claims as compared to that of owners. Sometimes greater emphasis is given to the residual claim of the owners by transferring liabilities to the other side of the equation as:

$$\mathbf{Capital = Assets - Liabilities}$$

All business transactions, however simple or complex they are, result in a change in the three basic elements of the equation. This is well explained with the help of the following series of examples:

(i) Mr. Prasad commenced business with a capital of rs.3,000: the result of this transaction is that the business, being a separate entity, gets

cash-asset of rs.30,000 and has to pay to mr. Prasad rs.30,000, his capital.

This transaction can be expressed in the form of the equation as follows:

Capital = Assets

Prasad Cash

30,000 30,000

(ii) purchased furniture for rs.5,000: the effect of this transaction

is that cash is reduced by rs.5,000 and a new asset viz. Furniture worth

rs.5,000 comes in, thereby, rendering no change in the total assets of the

business. The equation after this transaction will be:

Capital

=

Assets

Prasad

Cash

+

Furniture

30,000

25,000

+

5,000

(iii) borrowed rs.20,000 from mr. Gopal: as a result of this

transaction both the sides of the equation increase by rs.20,000; cash

balance is increased and a liability to mr. Gopal is created. The equation

will appear as follows:

Liabilities + Capital = Assets

Creditors + Prasad Cash + Furniture

20,000 30,000 45,000 5,000

(iv) purchased goods for cash rs.30,000: this transaction does not affect the liabilities side total nor the asset side total. Only the composition of the total assets changes i.e. Cash is reduced by rs.30,000 and a new asset viz. Stock worth rs.30,000 comes in. The equation after this transaction will be as follows:

Liabilities + Capital = Asset

Creditors Prasad Cash + Stock + Furniture

20,000 30,000 15,000 30,000 5,000

(v) goods worth rs.10,000 are sold on credit to ganesh for rs.12,000. The result is that stock is reduced by rs.10,000 a new asset namely debtor (mr. ganesh) for rs.12,000 comes into picture and the capital of mr. Prasad increases by rs.2,000 as the profit on the sale of goods belongs to the owner.

Now the accounting equation will look as under:

Liabilities + Capital = Asset

Creditors Prasad Cash + Debtors + Stock + Furniture

20,000 32,000 15,000 12,000 20,000 5,000

(vi) paid electricity charges rs.300: this transaction reduces both the cash balance and mr. Prasad's capital by rs.300. This is so because the expenditure reduces the business profit which in turn reduces the equity.

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The equation after this will be:

Liabilities + Capital = Assets

Creditors + Prasad Cash + Debtors + Stock + Furniture

20,000 31,700 14,700 12,000 20,000 5,000

Thus it may be seen that whatever is the nature of transaction, the accounting equation always tallies and should tally. The system of recording transactions based on this concept is called double entry system.

Accounting Period Concept:

In accordance with the going concern concept it is usually assumed that the life of a business is indefinitely long. But owners and other interested parties cannot wait until the business has been wound up for obtaining information about its results and financial position. For e.g. If for ten years no accounts have been prepared and if the business has been consistently incurring losses, there may not be any capital at all at the end of the tenth year which will be known only at that time. This would result in the compulsory winding up of the business. But, if at frequent intervals information are made available as to how things are going, then corrective measures may be suggested and remedial action may be taken. That is why, pacioli wrote as early as in 1494: 'frequent accounting makes for only friendship'. This need leads to the accounting period concept.

According to this concept accounting measures activities for a specified interval of time called the accounting period. For the purpose of reporting to various interested parties one year is the usual accounting period. Though pacioli wrote that books should be closed each year especially in a partnership, it applies to all types of business organizations.

Periodic Matching Of Costs And Revenues:

This concept is based on the accounting period concept. It is widely accepted that desire of making profit is the most important motivation to keep the proprietors engaged in business activities. Hence a major share of attention of the accountant is being devoted towards evolving appropriate techniques of measuring profits. One such technique is periodic matching of costs and revenues.

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In order to ascertain the profits made by the business during a period, the accountant should match the revenues of the period with the costs of that period. By 'matching' we mean appropriate association of related revenues and expenses pertaining to a particular accounting period. To put it in other words, profits made by a business in a particular accounting period can be ascertained only when the revenues earned during that period are compared with the expenses incurred for earning that revenue. The question as to when the payment was actually received or made is irrelevant. For e.g. In a business enterprise which adopts calendar year as accounting year, if rent for december 1989 was paid in january 1990, the rent so paid should be taken as the expenditure of the year 1989, revenues of that year should be matched with the costs incurred for earning that revenue including the rent for december 1989, though paid in january 1990. It is on account of this concept that adjustments are made for outstanding expenses, accrued incomes, prepaid expenses etc. While preparing financial statements at the end of the accounting period.

The system of accounting which follows this concept is called as mercantile system. In contrast to this there is another system of accounting called as cash system of accounting where entries are made only when cash is received or paid, no entry being made when a payment or receipt is merely due.

Realization Concept:

Realization refers to inflows of cash or claims to cash like bills receivables, debtors etc. Arising from the sale of assets or rendering of services. According to realization concept, revenues are usually recognized in the period in which goods were sold to customers or in which services were rendered. Sale is considered to be made at the point when the property in goods passes to the buyer and he becomes legally liable to pay. To illustrate this point, let us consider the case of a, a manufacturer who produces goods on receipt of orders. When an order is received from b, a starts the process of production and delivers the goods to b when the production is complete. B makes payment on receipt of goods. In this example, the sale will be presumed to have been made not at the time when goods are delivered to b. A second aspect of the realization concept is that the amount recognized as revenue is the amount that is reasonably certain to be realized. However, lot of reasoning has to be applied to ascertain

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as to how certain 'reasonably certain' is ... yet, one thing is clear, that is, the amount of revenue to be recorded may be less than the sales value of the goods sold and services rendered. For e.g. When goods are sold at a

discount, revenue is recorded not at the list price but at the amount at which sale is made. Similarly, it is on account of this aspect of the concept that when sales are made on credit, though entry is made for the full amount of sales, the estimated amount of bad debts is treated as an expense and the effect on net income is the same as if the revenue were reported as the amount of sales minus the estimated amount of bad debts.

1.1.3.10 Accounting Conventions

Convention Of Conservatism:

It is a world of uncertainty. So it is always better to pursue the policy of playing safe. This is the principle behind the convention of conservatism. According to this convention the accountant must be very careful while recognizing increases in an enterprise's profits rather than recognizing decreases in profits. For this the accountants have to follow the rule, anticipate no profit, provide for all possible losses, while recording business transactions. It is on account of this convention that the inventory is valued at cost or market price whichever is less, i.e. When the market price of the inventories has fallen below its cost price it is shown at market price i.e. The possible loss is provided and when it is above the cost price it is shown at cost price i.e. The anticipated profit is not recorded. It is for the same reason that provision for bad and doubtful debts, provision for fluctuation in investments, etc., are created. This concept affects principally the current assets.

Convention Of Full Disclosure:

the emergence of joint stock company form of business

organization resulted in the divorce between ownership and management.

This necessitated the full disclosure of accounting information about the enterprise to the owners and various other interested parties. Thus the convention of full disclosure became important. By this convention it is implied that accounts must be honestly prepared and all material information must be adequately disclosed therein. But it does not mean that all information that someone desires are to be disclosed in

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the financial statements. It only implies that there should be adequate disclosure of information which is of considerable value to owners, investors, creditors, government, etc. In sachar committee report (1978), it has been emphasized that openness in company affairs is the best way to secure responsible behaviour. It is in accordance with this convention that companies act, banking companies regulation act, insurance act etc., have prescribed proforma of financial statements to enable the concerned companies to disclose sufficient information. The practice of appending notes relating to various facts on items which do not find place in financial statements is also in pursuance to this convention. The following are some examples:

- (a) contingent liabilities appearing as a note
- (b) market value of investments appearing as a note
- (c) schedule of advances in case of banking companies

Convention Of Consistency:

According to this concept it is essential that accounting procedures,

practices and method should remain unchanged from one accounting period to another. This enables comparison of performance in one accounting period with that in the past. For e.g. If material issues are priced on the basis of fifo method the same basis should be followed year after year. Similarly, if depreciation is charged on fixed assets according to diminishing balance method it should be done in subsequent year also. But consistency never implies inflexibility as not to permit the introduction of improved techniques of accounting. However if introduction of a new technique results in inflating or deflating the figures of profit as compared to the previous methods, the fact should be well disclosed in the financial statement.

Convention Of Materiality:

The implication of this convention is that accountant should attach importance to material details and ignore insignificant ones. In the absence of this distinction, accounting will unnecessarily be overburdened with minute details. The question as to what is a material detail and what is not is left to the discretion of the individual accountant. Further, an item should be regarded as material if there is reason to believe that

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knowledge of it would influence the decision of informed investor. Some examples of material financial information are: fall in the value of stock, loss of markets due to competition, change in the demand pattern due to change in government regulations, etc. Examples of insignificant financial information are: rounding of income to nearest ten for tax purposes etc.

Sometimes if it is felt that an immaterial item must be disclosed, the same may be shown as footnote or in parenthesis according to its relative importance.

1.1.3.11 Summary

Accounting is rightly called the language of business. It is as old as money itself. It is concerned with the collecting, recording, evaluating and communicating the results of business transactions. Initially meant to meet the needs of a relatively few owners, it gradually expanded its functions to a public role of meeting the needs of a variety of interested parties. Broadly speaking all citizens are affected by accounting in some way. Accounting as an information system possesses with accountants engaged in private and public accounting. As in many other areas of human activity a number of specialized fields in accounting also have evolved as a result of rapid changes in business and social needs.

Accounting information should be made standard to convey the same meaning to all interested parties. To make it standard, certain accounting principles, concepts, conventions and standards have been developed over a period of time. These accounting principles, by whatever name they are called, serve as a general law or rule that is to be used as a guide to action. Without accounting principles, accounting information becomes incomparable, inconsistent and unreliable. An accounting principle to become generally accepted should satisfy the criteria of relevance, objectivity and feasibility. The fasb (financial accounting standards board) is currently the dominant body in the development of

accounting principles. The iasc is another professional body which is engaged in the development of the accounting standards. The icai is an associate member of the iasc and the asb started by the icai is formulating accounting standards in our country. Both the iasc and icai consider going concern, accrual and consistency as fundamental accounting assumptions.

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1.1.3.12 Key Words

⌘ ***Accounting***: language of business.

⌘ ***Financial Accounting***: concerned with the recording of transactions for a business enterprise and the periodic preparation of various reports from such records

⌘ ***Management Accounting***: accounting for internal management needs.

⌘ ***Cost Accounting***: accounting for determination and control of costs.

⌘ ***Accounting Principle***: the body of doctrines commonly associated with the theory and procedure of accounting.

⌘ ***Accounting Concept***: accounting postulates i.e. Necessary assumptions or conditions upon which accounting is based.

⌘ ***Accounting Conventions***: convention signifies the customs or traditions which serve as a guide to the preparation of accounting statements.

⌘ ***Accounting Standard***: standards to be observed in the presentation of financial statements.

1.1.3.13 Self Assessment Questions OR END OF CHAPTER QUESTIONS IMPORTANT FOR TESTS

1. Why is accounting called the language of business?
2. What are the functions of accounting?
3. Accounting as a social science can be viewed as an information system. examine.
4. Is accounting a staff function or line function? Explain the reasons.
5. Give an account of the various branches of accounting.
6. 'accounting is a service function'. Discuss the statement in the context of a modern manufacturing business.
7. Distinguish between financial accounting and management accounting.
8. What are accounting concepts and conventions? Is there any difference between them?
9. What is the significance of dual aspect concept?
10. Write a short note on accounting standards.
11. What is the position in india regarding the formulation and enforcement of accounting standards?

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Lesson – 1.2 The Accounting Process

1.2.1 Introduction

During the accounting period the accountant records transactions as and when they occur. At the end of each accounting period the accountant summarizes the information recorded and prepares the trial balance to

ensure that the double entry system has been maintained. This is often followed by certain adjusting entries which are to be made to account the changes that have taken place since the transactions were recorded. When the recording aspect has been made as complete and upto-date as possible the accountant prepares financial statements reflecting the financial position and the results of business operations. Thus the accounting process consists of three major parts:

- i. The recording of business transactions during that period;
- ii. The summarizing of information at the end of the period and
- iii. The reporting and interpreting of the summary information.

The success of the accounting process can be judged from the responsiveness of financial reports to the needs of the users of accounting information. This lesson takes the readers into the accounting process.

1.2.2

Understand the Rules of Debit and Credit

Pass Journal Entries

Prepare Ledger Accounts

Prepare a Trial Balance

Make Adjustment and Closing Entries

Get Introduced to Tally Package

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1.2.3 Contents

1.2.3.1 the account

1.2.3.2 debit and credit

1.2.3.3 the ledger

1.2.3.4 journal

1.2.3.5 the trial balance

1.2.3.6 closing entries

1.2.3.7 adjustment entries

1.2.3.8 preparation of financial statements

1.2.3.9 introduction to tally package

1.2.3.10 summary

1.2.3.11 key words

1.2.3.12 self assessment questions

1.2.3.1 The Account

The transactions that take place in a business enterprise during a specific period may effect increases and decreases in assets, liabilities, capital, revenue and expense items. To make up to-date information available when needed and to be able to prepare timely periodic financial statements, it is necessary to maintain a separate record for each item. For e.g. It is necessary to have a separate record devoted exclusively to record increases and decreases in cash, another one to record increases and decreases in supplies, a third one on machinery, etc. The type of record that is traditionally used for this purpose is called an account. Thus an account is a statement wherein information relating to an item or a group of similar items are accumulated. The simplest form of an account has three parts:

i. A title which gives the name of the item recorded in the account

- ii. A space for recording increases in the amount of the item, and
- iii. A space for recording decreases in the amount of the item. This form of an account is known as a 't' account because of its similarity to the letter 't' as illustrated below:

Title

Left side

Right side

(debit side)

(credit side)

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1.2.3.2 Debit And Credit

The left-hand side of any account is called the debit side and the right-hand side is called the credit side. Amounts entered on the left hand side of an account, regardless of the title of the account are called debits and the amounts entered on the right hand side of an account are called credits. To debit (dr) an account means to make an entry on the left-hand side of an account and to credit (cr) an account means to make an entry on the right-hand side. The words debit and credit have no other meaning in accounting, though in common parlance; debit has a negative connotation, while credit has a positive connotation.

Double entry system of recording business transactions is universally followed. In this system for each transaction the debit amount must equal the credit amount. If not, the recording of transactions is incorrect. The equality of debits and credits is maintained in accounting

simply by specifying that the left side of asset accounts is to be used for recording increases and the right side to be used for recording decreases; the right side of a liability and capital accounts is to be used to record increases and the left side to be used for recording decreases. The account balances when they are totaled, will then conform to the two equations:

1. Assets = liabilities + owners' equity
2. Debits = credits

From the above arrangement we can state that the rules of debits and credits are as follows:

Debit Signifies

Credit Signifies

1. Increase in asset accounts
1. Decrease in asset accounts
2. Decrease in liability accounts
2. increase in liability accounts

3. Decrease in owners' equity accounts 3.increase in owners' equity accounts

From the rule that credit signifies increase in owners' equity and debit signifies decrease in it, the rules of revenue accounts and expense accounts can be derived. While explaining the dual aspect of the concept in the preceding lesson, we have seen that revenues increase the owners' equity as they belong to the owners. Since owners' equity accounts increase

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on the credit side, revenue must be credits. So, if the revenue accounts are to be increased they must be credited and if they are to be decreased they must be debited. Similarly we have seen that expenses decrease the owners' equity. As owners' equity account decreases on the debit side expenses must be debits. Hence to increase the expense accounts, they must be debited and to decrease it, they must be credited. From the above we can arrive at the rules for revenues and expenses as follows:

Debit Signifies

Credit Signifies

Increase in expenses

Increase in revenues

Decrease in revenues

Decrease in expenses

1.2.3.3 The Ledger

A ledger is a set of accounts. It contains all the accounts of a specific business enterprise. It may be kept in any of the following two forms:

(i) bound ledger and

(ii) loose leaf ledger

A bound ledger is kept in the form of book which contains all the accounts. These days it is common to keep the ledger in the form of loose-leaf cards. This helps in posting transactions particularly when mechanized system of accounting is used.

1.2.3.4 Journal

When a business transaction takes place, the first record of it is done in a book called journal. The journal records all the transactions of a business in the order in which they occur. The journal may therefore be defined as a chronological record of accounting transactions. It shows names of accounts that are to be debited or credited, the amounts of the debits and credits and any other additional but useful information about the transaction. A journal does not replace but precedes the ledger. A proforma of a journal is given in illustration 1.

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Illustration 1:

Journal

Date

Particulars

L.F.

Debit

Credit

2005

Cash a/c dr.

3

30,000

30,000

August 3

To sales a/c

9

In illustration 1 the debit entry is listed first and the debit amount appears in the left-hand amount column; the account to be credited appears below the debit entry and the credit amount appears in the right hand amount column. The data in the journal entry are transferred to the appropriate accounts in the ledger by a process known as posting. Any entry in any account can be made only on the basis of a journal entry. The column l.f. which stands for ledger folio gives the page number of accounts in the ledger wherein posting for the journal entry has been made. After all the journal entries are posted in the respective ledger accounts, each ledger account is balanced by subtracting the smaller total from the bigger total. The resultant figure may be either debit or credit balance and vice-versa.

Thus the transactions are recorded first of all in the journal and then they are posted to the ledger. Hence the journal is called the book of original or prime entry and the ledger is the book of second entry.

While the journal records transactions in a chronological order, the ledger records transactions in an analytical order.

1.2.3.5 The Trial Balance

The trial balance is simply a list of the account names and their balance as of a given moment of time with debit balances in one column and credit balances in another column. It is prepared to ensure that the mechanics of the recording and posting of the transaction have been carried out accurately. If the recording and posting have been accurate then the debit total and credit total in the trial balance must tally thereby evidencing that an equality of debits and credits has been maintained. In this connection it is but proper to caution that mere agreement of the debt and credit total in the trial balance is not conclusive proof of correct recording and posting. There are many errors which may not affect the agreement of trial balance like total omission of a transaction, posting the

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right amount on the right side but of a wrong account etc.

The points which we have discussed so far can very well be explained with the help of the following simple illustration.

Illustration 2:

January 1 - started business with rs.3,000

January 2 - bought goods worth rs.2,000

January 9 - received order for half of the goods from 'g'

January 12 - delivered the goods, g invoiced rs.1,300

January 15 - received order for remaining half of the total goods purchased

January 21 - delivered goods and received cash rs.1,200

January 30 - g makes payment

January 31 - paid salaries rs.210

- received interest rs.50

Let us now analyze the transactions one by one.

January 1 – Started Business With Rs.3,000:

The two accounts involved are cash and owners' equity. Cash, an asset increases and hence it has to be debited. Owners' equity, a liability also increases and hence it has to be credited.

January 2 – Bought Goods Worth Rs.2,000:

The two accounts affected by this transaction are cash and goods (purchases). Cash balance decreases and hence it is credited and goods on hand, an asset, increases and hence it is to be debited.

January 9 – Received Order For Half Of The Goods From 'G':

No entry is required as realization of revenue will take place only when goods are delivered (realization concept).

January 12 – Delivered The Goods, 'G' Invoiced Rs.1,300:

This transaction affects two accounts – goods (sales) a/c and receivables a/c. Since it is a credit transaction, receivables increase

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(asset) and hence it is to be debited. Sales decreases goods on hand and hence goods (sales) a/c is to be credited. Since the term 'goods' is used to mean purchase of goods and sale of goods, to avoid confusion, purchase of goods is simply shown as purchases a/c and sale of goods as sales a/c.

January 15 – Received Order For Remaining Half Of Goods:

No entry.

January 21 – Delivered Goods And Received Cash Rs.1,200:

This transaction affects cash a/c. Since cash is realized, the cash balance will increase and hence cash account is to be debited. Since the stock of goods becomes nil due to sale, sales a/c is to be credited (as asset in the form of goods on hand has reduced due to sales).

January 30 - `G' Makes Payment:

Both the accounts affected by this transaction are asset accounts – cash and receivables. Cash balance increases and hence it is to be debited. Receivables balance decreases and hence it is to be credited.

January 31 – Paid Salaries Rs.210:

Because of payment of salaries cash balance decreases and hence cash account is to be credited. Salary is an expense and since expense has the effect of reducing owners' equity and as owners' equity account decreases on the debit side, expenses account is to be debited.

January 31 – Received Interest Rs.50:

The receipt of interest increases cash balance and hence cash a/c is to be debited. Interest being revenue which has the effect of increasing the owners' equity, it has to be credited as owners' equity account increases on the credit side.

When journal entries for the above transactions are passed, they would be as follows:

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Journal

Date

Particulars

L.F.

Debit

Credit

Cash A/C Dr. To

Jan. 1

Capital A/C (Being

3,000

3,000

Business Started)

Purchases A/C Dr.

Jan. 2

To Cash (Being Goods

2,000

2,000

Purchased)

Receivables A/C Dr.

Jan. 12

To Sales A/C (Being

1,300

1,300

Goods Sold On Credit)

Cash A/C Dr.

To

Sales

A/C

Jan. 21

1,200

1,200

(Being Goods Sold For
Cash)

Cash A/C Dr.

To Receivables A/C

Jan. 30

1,300

1,300

(Being Cash Received
For Sale Of Goods)

Salaries A/C Dr.

Jan. 31

To Cash A/C

210

210

(Being Salaries Paid)

Cash A/C Dr.

To Interest A/C

Jan. 31

50

(Being Interest
Received)

Now the above journal entries are posted into respective ledger accounts
which in turn are balanced.

Cash Account

Debit

Rs.

Credit

Rs.

To Capital A/C

3,000

By Purchases A/C

2,000

To Sales A/C

1,200

By Salaries A/C

210

To Receivables

1,300

A/C

By Balance C/D

3,340

To Interest A/C

50

5,550

5,550

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Capital Account

Debit

Rs.

Credit

Rs.

3,000

3,000

To Balance C/D

By Cash A/C

3,000

3,000

Purchases Account

Debit

Rs.

Credit

Rs.

2,000

2,000

To Cash A/C

By Balance C/D

2,000

2,000

Receivables Account

Debit

Rs.

Credit

Rs.

1,300

1,300

To Balance C/D

By Cash A/C

1,300

1,300

Sales Account

Debit

Rs.

Credit

Rs.

1,300

2,500

By Receivables

To Balance C/D

A/C

1,200

By Cash A/C

2,500

2,500

Salaries Account

Debit

Rs.

Credit

Rs.

210

210

To Cash A/C

By Balance C/D

210

210

Interest Account

Debit

Rs.

Credit

Rs.

To Balance C/D

50

50

By Cash A/C

50

Now A Trial Balance Can Be Prepared And When Prepared It Would Appear

As Follows:

Trial Balance

Debit

Rs.

Credit

Rs.

Cash

3,340

Capital

3,000

Purchases

2,000

Sales

2,500

Salaries

210

Interest

50

5,550

5,550

35

1.2.3.6 Closing Entries

Periodically, usually at the end of the accounting period, all revenue and expense account balances are transferred to an account called income summary or profit and loss account and are then said to be closed. (a detailed discussion on profit and loss account can be had in a subsequent lesson). The balance in the profit and loss account, which is the net income or net loss for the period, is then transferred to the capital account and thus the profit and loss account is also closed. In the case of corporation the net income or net loss is transferred to retained earnings account which is a part of owners' equity. The entries which are passed for transferring these accounts are called as closing entries. Because of this periodic closing of revenue and expense accounts, they are called as temporary or nominal accounts. On the other hand, the assets, liabilities and owners' equity accounts, the balances of which are shown on the balance sheet and are carried forward from year to year are called as permanent or real accounts.

The principle of framing a closing entry is very simple. If an account is having a debit balance, then it is credited and the profit and loss account is debited. Similarly if a particular account is having a credit balance, it is closed by debiting it and crediting the profit and loss account. In our example sales account and interest account are revenues, and purchases account and salaries account are expenses. Purchases account is an expense because the entire goods have been sold out in the accounting period itself and hence they become cost of goods sold out. This aspect would become more clear when the reader proceeds to the lessons on profit and loss account. The closing entries would appear as follows:

Journal

P articulars

L.F.

Debit

Credit

Profit And Loss a/c

Dr.

210

1

2,210

To Salaries A/C

2,000

To Salaries A/C

Sales A/C Dr.

2

To Profit And Loss

2,500

2,500

A/C

Interest

A/C

Dr.

3

50

To Profit And Loss

A/C

Now profit and loss a/c, retained earnings a/c and balance sheet can be prepared

which would appear as follows:

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Profit And Loss Account

Debit

Rs.

Credit

Rs.

Purchases A/C

Salaries A/C

2,000

R e t a i n e d

210

Sales

2,500

Earnings A/C

Interest

50

340

2,550

5,550

Retained Earnings Account

Debit

Rs.

Credit

Rs.

Balance

340

Profit And Loss

A/C

340

340

340

Balance Sheet

Liabilities

Rs.

Assets

Rs.

Capital

3,000

Retained Earn-

Cash

3,340

ings

340

3,340

3,340

1.2.3.7 Adjustment Entries

Because of the adopting of accrual accounting, after the preparation of trial balance, adjustments relating to the accounting period have to be made in order to make the financial statements complete. These adjustments are needed for transactions which have not been recorded but which affect the financial position and operating results of the business. They may be divided into four kinds: two in relation to revenues and the other two in relation to expenses. The two in relation to revenues are:

(i) Unrecorded Revenues:

Income earned for the period but not received in cash. For e.g.

Interest for the last quarter of the accounting period is yet to be received though fallen due. The adjustment entry to be passed is:

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Accrued

interest

a/c

(Dr)

Interest a/c

(Cr)

(ii) Revenues Received In Advance:

i.e. Income relating to the next period received in the current

accounting period: e.g. Rent received in advance. The adjustment entry is:

Rent

a/c

(dr)

Rent received in advance a/c

(cr)

The two relating to expenses are:

(i) Unrecorded Expenses:

i.e. Expenses were incurred during the period but no record of them

as yet has been made: e.g. Rs.500 wages earned by an employee during the

period remaining to be paid. The adjustment entry would be:

Wages a/c

(Dr)

Accrued

wages

a/c

(Cr)

(ii) Prepaid Expenses:

i.e., expenses relating to the subsequent period paid in advance in

the current accounting period. An example which is frequently cited for

this is insurance paid in advance. The adjustment entry would be:

Prepaid insurance a/c

(Dr)

Insurance a/c

(Cr)

In the above four cases unrecorded revenues and prepaid expenses are assets and hence debited (as debit may signify increase in assets) and revenues received in advance and unrecorded expenses are liabilities and hence credited (as credit may signify increase in liabilities).

Besides the above mentioned four adjustments, some more are to be done before preparing the financial statements. They are:

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1. Inventory at the end
2. Provision of depreciation
3. Provision for bad debts
4. Provision for discount on receivables and payables
5. Interest on capital and drawings

1.2.3.8 Preparation Of Financial Statements

Now everything is set ready for the preparation of financial statements for the accounting period and as of the last day of the accounting period. Generally agreed accounting principles (gaap) require that three such reports be prepared:

- (i) a balance sheet
- (ii) a profit and loss account (or) income statement
- (iii) a fund flow statement

A detailed discussion on these three financial statements follows in the succeeding lessons.

1.2.3.9 Introduction To Tally Package

Today an increasingly large number of companies have adopted mechanized accounting. The main reasons for this development are that:

(i) the size of firms have become very large resulting in manifold increase in accounting data to be collected and processed.

(ii) the requirements of modern management which want detailed analysis in many ways, of the accounting and statistical information for the efficient discharge of their duties.

(iii) collection of statistics not only for the firm's own use but also for submission to various official authorities.

In this context, the use of computers in accounting is worth mentioning. Late 80's and early 90's was an era of financial accounting software. Many software developers offered separate financial and

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inventory software to take care of the needs of the concerns but users wanted a single software that will take care of production and inventory management i.e. They wanted a single software where, if an invoice is entered, that will update accounts as well as inventory information. Here tally comes in handy.

Tally is one of the acclaimed accounting software with large user base in india and abroad, which is continuously growing. There is good potential for tally professionals even in small towns. Tally which is a vast software covers a lot of areas for various types of industries and is loaded with options. So, every organization needs a hardcore tally professional to exploit its full capabilities and functionality to implement tally. Tally which

is a financial and inventory management system is developed in india using tally development language. Tally has been created by pentronics (p) limited, bangalore.

Features Of Tally:

1. Accounts without any account codes.
2. Maintains complete range of books of accounts, final accounts like balance sheets, profit and loss statements, cash and fund flows, trial balance and others.
3. Provides option to post stock value from inventory directly to balance sheet and profit and loss a/c as per the valuation method specified by user. This greatly simplifies the procedure and one gets the final accounts which is in tune with the stock statements of the inventory system.
4. Provides multiple reports in diverse formats.
5. Various options for interest calculation.
6. Allows accounts of multiple companies simultaneously.
7. Multiple currencies in the same transactions and viewing all reports in one or more currency.
8. Unlimited budgets and periods, user definable security levels for access control and audit capabilities to track malafide changes.
9. Allows import and export of data from or to other systems.
10. Online help.
11. Backup and restore of data.
12. Facilitates printing of cheques etc.

1.2.3.10 Summary

The following steps are involved in the accounting process:

1. The first and the most important part of the accounting process is the analysis of the transactions to decide which account is to be debited and which account is to be credited.
2. Next comes journalising the transactions i.e. Recording the transactions in the journal.
3. The journal entries are posted into respective accounts in the ledger and the ledger accounts are balanced.
4. At the end of the accounting period, a trial balance is prepared to ensure quality of debits and credits.
5. Adjustment and closing entries are made to enable the preparation of financial statements.
6. As a last step financial statements are prepared.

These six steps taken sequentially complete the accounting process during an accounting period and are repeated in each subsequent period.

1.2.3.11 Key Words

Account: a statement wherein information relating to all items are accumulated.

Debit: signifies increase in asset accounts, decrease in liability accounts and decrease in owners' equity accounts.

Credit: signifies decrease in asset accounts, increase in liability accounts and increase in owners' equity accounts.

Ledger: a set of accounts of a specific business enterprise.

Journal: a book of prime entry.

Trial Balance: a list of balances of accounts to ensure arithmetical accuracy.

Closing Entries: entries passed to transfer the revenue accounts to profit and loss a/c.

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Adjustment Entries: entries passed for transactions which are not recorded but which affect the financial position and operating results of the business.

1.2.3.12 Self Assessment Questions

1. Explain the following:

(a) a journal

(b) an account

(c) a ledger

2. Bring out the relationship between a journal and a ledger.

3. Explain the significance of trial balance.

4. Why are adjustment entries necessary?

5. Narrate the rules of debit and credit.

6. Distinguish nominal accounts from real accounts.

7. Explain the mechanism of balancing an account.

8. How and why closing entries are made?

9. The following transactions relate to a business concern for the month of december 2005. Journalise them, post into ledger accounts, balance and prepare the trial balance.

March 1 - started business with a capital of rs.9,000

March 2 - purchased furniture for rs.300

March 3 - purchased goods for rs.6,000

March 11 - received order for half-of the goods from `c`

March 15 - delivered goods, `c` invoiced rs.4,000

March 17 - received order for the remaining half of the goods

March 21 - delivered goods, cash received rs.3,800

March 31 - paid wages of rs.300

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Lesson 1.3 - Preparation of Final Accounts

1.3.1 Introduction

The primary objective of any business concern is to earn income.

Ascertainment of the periodic income of a business enterprise is perhaps the important objective of the accounting process. This objective is achieved by the preparation of profit and loss account or the income statement.

Profit and loss account is generally considered to be of greatest interest and importance to end users of accounting information. The profit and loss account enables all concerned to find out whether the business operations have been profitable or not during a particular period. Usually the profit and loss account is accompanied by the balance sheet as on the last date of the accounting period for which the profit and loss account is prepared. A balance sheet shows the financial position of a business enterprise as of a specified moment of time. It contains a list of the assets, the liabilities and

the capital of a business entity as of a specified date, usually at the close of the last day of a month or a year. While the profit and loss account is categorized as a flow report (for a particular period), the balance sheet is categorized as a status report (as on a particular date).

1.3.2

Understand the Basic Ideas of Income and Expense

Prepare a Profit and Loss Account/Income Statement in the Proper Format

Understand the Basic Ideas About a Balance Sheet

Classify the Different Assets and Liabilities

Prepare a Balance Sheet in the Proper Format

1.3.3 Contents

- 1.3.3.1 Basic ideas about income and expense
- 1.3.3.2 Form and presentation of profit and loss account /
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- Income statement
- 1.3.3.3 explanation of items on the income statement
- 1.3.3.4 statement of retained earnings
- 1.3.3.5 balance sheet
- 1.3.3.6 form and presentation of balance sheet
- 1.3.3.7 listing of items in the balance sheet
- 1.3.3.8 classification of items in the balance sheet
- 1.3.3.9 summary
- 1.3.3.10 key words

1.3.3.11 self assessment questions

1.3.3.12 key to self assessment questions

1.3.3.13 case analysis

1.3.3.14 book for further reading

1.3.3.1 Basic Ideas About Income And Expense

Profit and loss account consists of two elements: one element is the inflows that result from the sale of goods and services to customers which are called as revenues. The other element reports the outflows that were made in order to generate those revenues; these are called as expenses.

Income is the amount by which revenues exceed expenses. The term 'net income' is used to indicate the excess of all the revenues over all the expenses. The basic equation is:

$$\textit{Revenue} - \textit{Expenses} = \textit{Net Income}$$

This is in accordance with the matching concept.

Income And Owner's Equity:

The net income of an accounting period increases owner's equity because it belongs to the owner. To quote an example, goods costing rs.20,000 are sold on credit for rs.28,000. The result is that stock is reduced by rs.20,000 and a new asset namely debtor for rs.28,000 is created and the total assets increase by the difference of rs.8,000. Because of the dual aspect concept, we know that the equity side of the balance sheet would also increase by rs.8,000 and the increase would be in owner's equity. This is because the profit on sale of goods belongs to the owner. It is clear from the above example that income increases the owner's equity.

Income Vs. Receipts:

Income of a period increases the owner's equity but it need not result in increase in cash balance. Loss of a period decreases owner's equity but it need not result in decrease in cash balance. Similarly, increase in cash balance need not result in increased income and owner's equity and decrease in cash balance need not denote loss and decrease in owner's equity. All these are due to the fact that income is not the same as cash receipt. The following examples make clear the above point:

I) when goods costing rs.20,000 are sold on credit for rs.28,000 it results in an income of rs.8,000 but the cash balance does not increase.

Ii) when goods costing rs.18,000 are sold on credit for rs.15,000 there is a loss of rs.3,000 but there is no corresponding decrease in cash.

Iii) when a loan of rs.5,000 is borrowed the cash balance increases but there is no impact on income.

Iv) when a loan of rs.8,000 is repaid it decreases only the cash balance and not the income.

Expenses:

An expense is an item of cost applicable to an accounting period.

It represents economic resources consumed during the current period.

When expenditure is incurred the cost involved is either an asset or an

expense. If the benefits of the expenditure relate to further periods, it is

an asset. If not, it is an expense of the current period. Over the entire

life of an enterprise, most expenditure becomes expenses. But according

to accounting period concept, accounts are prepared for each accounting period. Hence, we get the following four types of transactions relating to expenditure and expenses:

Expenditures That Are Also Expenses:

This is the simplest and most common type of transaction to account for. If an item is acquired during the year, it is expenditure. If the item is consumed in the same year, then the expenditure becomes expense.

E.g. Raw materials purchased are converted into saleable goods and are sold in the same year.

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Assets That Become Expenses:

when expenditures incurred result in benefits for the future period they become assets. When such assets are used in subsequent years they become expenses of the year in which they are used. For e.g. Inventory of finished goods are assets at the end of a particular accounting year. When they are sold in the next accounting year they become expenses.

Expenditures That Are Not Expenses:

As already pointed, out when the benefits of the expenditure relate to future periods they become assets and not expenses. This applies not only to fixed assets but also to inventories which remain unsold at the end of the accounting year. For e.g. The expenditure incurred on inventory remaining unsold is asset until it is sold out.

Expenses Not Yet Paid:

Some expenses would have been incurred in the accounting year

but payment for the same would not have been made within the accounting year. These are called accrued expenses and are shown as liabilities at the year end.

1.3.3.2 Form And Presentation Of Profit And Loss Account / Income Statement

In practice there is considerable variety in the format and degree of detail used in income statements. The profit and loss account is usually prepared in “t” shape. The following (illustration-a) is the summarized profit and loss account of ali akbar ltd.

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Illustration – A:

Ali Akbar Ltd

Profit And Loss Account For The Year Ended 31st March 2005

(rs. In `000)

Particulars

Rs.

Particulars

Rs.

Cost Of Goods Sold

78,680

Sales(Less Dis count)

89,740

Expenses (Schedule17)

33,804

Other Income (Sched-

39,947

Interest (Schedule 18)

2,902

ule 13)

Director's Fees

11

Depreciation

20,94

Provision For Taxation

6,565

Net Profit

5,,625

1,29,687

1,29,687

In the "T" shaped profit and loss account, expenses are shown on

the left hand side i.e., the debit side and revenues are shown on the right

hand side i.e., the credit side. Net profit or loss is the balancing figure.

The profit and loss account can also be presented in the form of a

statement when it is called as income statement. There are two widely used

forms of income statement: single step form and multiple-step form. The

single-step form of income statement derives its name from the fact that

the total of all expenses is deducted from the total of all revenues.

Illustration – a can be presented in the single-step form as given in

illustration – b.

Illustration – B:

Ali Akbar Ltd

Income Statement For The Year Ended 31st March 2005

(Rs. In `000)

Revenues

Sales (Less Discount)

89,740

Other Income (Sched-

ule 13)

39,947

1,29,687

47

Expenses

Cost Of Goods Sold

78,680

Expenses (Schedule 17) 33,804

Interest (Schedule 18)

2,902

Director's Fees

11

Depreciation

20,94

Provision For Taxation 6,565

1,24,062

5,625

The single-step form has the advantage of simplicity but it is inadequate for analytical purpose.

The multi-step form income statement is so called because of its numerous sections, sub-sections and intermediate balances. Illustration – c is a typical proforma of multiple-step income statement.

Illustration – C:

Proforma Of A Multiple-Step Income Statement

Gross Sales

Xxx

Less: Sales Returns

Xxx

Net Sales

Xxx

Less: Cost Of Goods Sold

Raw Materials Cost

Opening Stock Of Raw Material

Xxx

Add Purchase Of Raw Material

Xxx

Freight

Xxx

Raw Materials Available

Xxx

Less Closing Stock Of Raw Material

Xxx

Raw Materials Consumed

Xxx

Direct Labour Cost

Xxx

Manufacturing Expenses

Xxx

Total Production Cost

Xxx

Add Opening Work-In-Progress

Xxx

Total

Xxx

Less Closing Work-In-Progress

Xxx

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Cost Of Goods Manufactured

Xxx

Add Opening Finished Goods

Xxx

Cost Of Goods Available For Sale

Xxx

Less Closing Finished Goods

Xxx

Xxx

Cost Of Goods Sold

Gross Profit

Xxx

Less Operating Expenses

Xxx

Administrative Expenses

Selling And Distribution Expenses

Xxx

Operating Profit

Xxx

Xxx

Add Non-Operating Income

Xxx

(Such As Dividend Received

Profit On Sale Of Assets Etc.)

Xxx

Xxx

Less Non-Operating Expenses

(Such As Discount On Issue Of Shares

Written Off, Loss On Sale Of Assets, Etc.)

Xxx

Xxx

Profit (Or) Earnings Before Interest & Tax (Ebit)

Xxx

Less Interest

Xxx

Xxx

Profit (Or) Earnings Before Tax (Ebt)

Xxx

Less Provision For Income-Tax

Xxx

Xxx

Net Profit (Or) Earnings After Tax (Eat)

Xxx

Earnings Per Share Of Common Stock

Xxx

Xxx

The Multiple-Step Form Of Illustration 'C' Would Be As Given Under
Illustration 'D'.

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Illustration – D

Ali Akbar Ltd

Income Statement For The Year Ended 31st March 2005

(rs. In `000)

Net Sales

98,740

Less: Cost Of Goods Sold

78,686

Gross Profit

11,054

Less Operating Expenses

Expenses (Schedule 17)

Director's Fee

33,804

Depreciation

11

Operating Loss

2,094

35,909

(-) 24,855

Add Non-Operating Income

Other Income (Schedule 13)

39,947

Profit (Or) Earnings Before Interest & Tax(Ebit)

15,092

Less Interest (Schedule 18)

2,902

Profit (Or) Earnings Before Tax (Ebt)

12,190

Less Provision For Income-Tax

6,565

Net Profit (Or) Earnings After Tax (Eat)

5,625

The advantage of multiple-step form of income statement over single step form and the “t” shaped profit and loss account is that there are a number of significant sub totals on the road to net income which lend themselves for significant analysis.

Income statements prepared for use by the managers of an enterprise Usually contain more detailed information than that shown in the above illustrations.

1.3.3.3 Explanation Of Items On The Income Staatement

The heading of the income statement must show:

- I) the business enterprise to which it relates (ali akbar ltd.)
- Ii) the name of the statement (income statement)
- Iii) the time period covered (year ended 31st march of the relevant year)

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The income statement is generally followed by various schedules that give detailed account of the items, listed on them. Information about these schedules are given against each item in the financial statements.

One important objective in reporting revenue on an income statement is to disclose the major source of revenue and to separate it from miscellaneous sources. For most companies the major source of revenue is the sale of goods and services.

Sales Revenue:

An income statement often reports several separate items in the sales revenue section, the net of which is the net sales figure. Gross sales is the total invoice price of the goods sold or services rendered during the period. It should not include sales taxes or excise duties that may be charged to the customers. Such taxes are not revenues but rather represent collections that the business makes on behalf of the government and are liabilities to the government until paid. Similarly, postage, freight or other items billed to the customers at cost are not revenues. These items do not appear in the sales figure but instead are an offset to the costs the company incurs for them. Sales returns and allowances represent the sales values of goods that were returned by customers or allowance made to customers because the goods were defective. The amount can be subtracted from the sales figure directly without showing it as a separate item on the income statement. But it is always better to show them separately.

Sometimes called as cash discounts, sales discounts are the amount of discounts allowed to customers for prompt payment. For e.g. If a

business offers a 3% discount to customers who pay within 7 days from the date of the invoice and it sells rs.30,000 of goods to a customer who takes advantage of this discount, the business receives only rs.29,100 in cash and records the balance rs.900 as sales discount. There is another kind of discount called as trade discount which is given by the wholesaler or manufacturer to the retailers to enable them to sell at catalogue price and make a profit: e.g. List less 30 percent. Trade discount does not appear in the accounting records at all.

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Miscellaneous Or Secondary Sources Of Revenues:

These are revenues earned from activities not associated with the sale of the enterprise's goods and services. Interest or dividends earned on marketable securities, royalties, rents and gains on disposal of assets are examples of this type of revenues. For e.g. In the case of ali akbar ltd., its operating loss has been converted into net profit only because of other income, other than sales revenue. Schedule 13 gives details of other income earned by ali akbar ltd.

Schedule 13 – Other Income

(rs.`000)

Income From Trade Investments

825

Interest On Bank Deposits & Others

1,042

Profit On Sale Of Investments

456

Profit On Sale Of Inventories

813

Miscellaneous Income

2,394

Factory Charges Recovered

9,081

Bottle Deposits Forfeited

25,336

39,947

Cost Of Goods Sold:

when income is increased by the sale value of goods or services sold, it is also decreased by the cost of these goods or services. The cost of goods or services sold is called the cost of sales. In manufacturing firms and retailing business it is often called the cost of goods sold. The complexity of calculation of cost of goods sold varies depending upon the nature of the business. In the case of a trading concern which deals in commodities it is very simple to calculate the most of goods sold and it is done as follows:

Opening stock

xxx

Add: purchase

xxx

Freight

xxx

Goods available for sale xxx

Less: closing stock

xxx

Cost of goods sold

xxx

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The calculation becomes a complicated process in the case of manufacturing concern, especially when a number of products are manufactured because it involves the calculation of the work in progress and valuation of inventory. The cost of goods sold in the case of ali akbar ltd., would have been calculated as given in illustration è'.

Illustration E:

Cost Of Goods Sold

(rs.`000)

Opening Stock

4,436

Raw Materials Consumed

22,151

Packing Materials Consumed

48,536

Excise Duty

7,805

82,928

Less: Closing Stock

4,242

Cost Of Goods Sold

78,686

Gross Profit:

The excess of sales revenue over cost of goods sold is gross margin or gross profit. In the case of multiple-step income statement it is shown as a separate item. Significant managerial decisions can be taken by calculating the percentage of gross profit on sale. This percentage indicates the average mark up obtained on products sold. The percentage varies widely among industries, but healthy companies in the same industry tend to have similar gross profit percentages.

Operating Expenses:

Expenses which are incurred for running the business and which are not directly related to the company's production or trading are collectively called as operating expenses. Usually operating expenses include administration expenses, finance expenses, depreciation and selling and distribution expenses. Administration expenses generally include personnel expenses also. However sometimes personnel expenses may be shown separately under the heading establishment expenses.

Until recently most companies included expenses on research and development as part of general and administrative expenses. But now-

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a-days the financial accounting standards board (fasb) requires that this

amount should be shown separately. This is so because the expenditure on research and development could provide an important clue as to how cautious the company is in keeping its products and services up to date.

Operating Profit: operating profit is obtained when operating expenses are deducted from gross profit.

Non-Operating Expenses:

These are expenses which are not related to the activities of the business e.g. Loss on sale of asset, discount on shares written off etc.

These expenses are deducted from the income obtained after adding other incomes to the operating profit. Other incomes or miscellaneous receipts have already been explained. The resultant profit is called as profit (or) earning before interest and tax (ebit).

Interest Expenses:

Interest expense arises when part of the expenses are met from borrowed funds. The fasb requires separate disclosure of interest expense.

This item of expense is deducted from income or earnings before interest and tax. The resultant figure is profit (or) earnings before tax (ebt).

Income Tax: the provision for tax is estimated based on the quantum of profit before tax. As per the corporate tax laws, the amount of tax payable is determined not on the basis of reported net profit but the net profit arrived at has to be recomputed and adjusted for determining the tax liability. That is why the liability is always shown as a provision.

Net Profit:

This is the amount of profit finally available to the enterprise for

Appropriation. Net profits is reported not only in total but also per share of stock. This per share amount is obtained by dividing the total amount of net profit by the number of shares outstanding. The net profit is usually referred to as profit or earnings after tax. This profit could either be distributed as dividends to shareholders or retained in the business.

Just like gross profit percentage, net profit percentage on sales can also be calculated which will be of great use for managerial analysis.

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1.3.3.4 Statement Of Retained Earnings

The term retained earnings means the accumulated excess of earnings over losses and dividends. The statement of retained earnings is generally included with almost any set of financial statements although it is not considered to be one of the major financial statements. A typical statement of retained earnings starts with the opening balance of retained earnings, the net income for the period as an addition, the dividends as a deduction, and ends with the closing balance of retained earnings. The statement may be prepared and shown on a separate sheet or included at the bottom of the income statement. The balance shown by the income statement is transferred to the balance sheet through the statement of retained earnings after making necessary appropriations. This statement thus links the income statement to the retained earning item on the balance sheet. This statement can be prepared in 't' shape also when it is called as profit and loss appropriation account. Illustration 'f' gives the statement of retained earning of ali akbar ltd.

Illustration – F Ali Akbar Ltd.

For The Year Ended 31st March 2012

(Rs. `000)

Retained Earnings At The Beginning Of

700

The Year

5,625

Add: Net Income

6,325

Less: Dividends

5,600

General Reserve

625

6,225

Retained Earnings At The End Of The Year

100

1.3.3.5 Balance Sheet

The balance sheet is basically a historical report showing the cumulative effect of past transactions. It is often described as a detailed expression of the following fundamental accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity (Capital)}$$

Assets are costs which represent expected future economic benefits to the business enterprise. However, the rights to assets have been acquired by the Enterprise as a result of past transactions.

Liabilities also result from past transactions. They represent obligations which require settlement in the future either by conveying assets or by performing services. Implicit in these concepts of the nature of assets and liabilities is the meaning of owners' equity as the residual interest in the assets of the enterprise.

1.3.3.6 Form And Presentation Of A Balance Sheet

Two objectives are dominant in presenting information in a balance sheet. One is clarity and readability; the other is disclosure of significant facts within the framework of the basic assumptions of accounting. Balance sheet classification, terminology and the general form of presentation should be studied with these objectives in mind.

It is proposed to explain the various aspects of the balance sheet with the help of the following typical summarized balance sheet of an imaginary

Partnership firm:

Illustration A:

Sundaram & Sons

Balance Sheet As At 31st December 2011

Liabilities &

Rs

Rs

Assets

Rs

Rs

Capital

Current Liabilities

Current Assets

Bills Payable

7,000

Cash

1,000

Creditors

7,000

Bank

2,000

Outstanding

Marketable

Expenses

Securities

3,000

Income Received

7,000

Bills Receivables

3,000

In Advance

Debtors

10,000

Provision For

1,000

Less Provision

Income

32,000 For Doubtful

Tax

10,000

Debts

1,000

9,000

Total Current

Inventory

12,000

Liabilities

Prepaid

3,000

Long Term

Expenses

33,000

Liabilities

Total Current

Mortgage Loan

20,000 Assets

Owners' Equity

Investments:

S's Capital

10,000 Long Term

A's Capital

15,000 Securities

U's Capital

20,000 AtCosts

3,000

General Reserve

10,000 Fixed Assets:

Furniture &

Fixtures Less:

Accumulated

Dep. Plant &

Machinery

900

Less:

Accumulated

Dep.

1,000

8,000

Land

100

20,000

Buildings

Intangible Assets 10,000

Patents

2,100

Trade Marks

2,000

11,000

Goodwill

9,000

Total Assets

1,07,000 Total Liabilities

1,07,000

& Owners'

Equity

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Conventions Of Preparing The Balance Sheet:

There are two conventions of preparing the balance sheet, the american and the english. According to the american convention, assets are shown on the left hand side and the liabilities and the owners' equity on the right hand side. Under the english convention just the opposite is followed i.e. Assets are shown on the right hand side and the liabilities and owners' equity are shown on the left hand side. In the illustration à', the american convention has been followed.

Forms Of Presenting The Balance Sheet:

There are two forms of presenting the balance sheet – account form and report form. When the assets are listed on the left hand side and liabilities and owners’ equity on the right hand side, we get the account form of balance sheet. It is so called because it is similar to an account. An alternative practice is the report form of balance sheet where the assets are listed at the top of the page and the liabilities and owners’ equity are listed beneath them. In illustration à’ we have followed the account form of balance sheet. Now-a-days joint stock companies present balance sheet in the form of a statement in the annual reports. To illustrate, the balance sheet of ali akbar ltd. Pondicherry as on 31-3-2012 is given below:

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Illustration `b’:

Ali akbar ltd. Balance sheet as on 31-3-2012

2004-05

2005-06

Rs. ‘000

Rs. ‘000

Sche-

dule

I. Sources of Funds

1. Shareholders’ Funds

Capital

1

1,40,00

1,40,00

Reserves And Surplus

2

12,11,94

12,73,93

2. Loan Funds

Secured Loans

3

2,45,15

2,67,62

Unsecured Loans

4

24

15,97,09

16,81,79

Ii. Application of

Funds

1. Fixed Assets

Gross Block

5

14,19,93

13,73,59

Less: Depreciation

4,64,56

3,81,38

Net Block

9,55,37

9,92,21

Capital Work-In-

16,27

Progress

2. Investments

3. Current Assets

6

9,55,37

10,08,48

Loans And Advances

76,39

63,07

Inventories

Sundry Debtors

2,37,55

Cash And Bank

1,55,71

3,16,52

Balances

7

3,59,65

74,55

Loans And Advances

8

69,52

2,11,60

Less: Current

9

2,22,03

8,40,22

Liabilities &

10

8,06,91

Provisions

Liabilities

1,74,77

Provisions

1,85,58

55,21

11

56,00

12

2,29,98

Net Current Assets

2,41,58

5,65,33

6,10,24

15,97,09

16,81,79

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Notes On The Accounts:

Schedules 1 to 12 and 19 referred to above, form an integral part of the balance sheet.

From the above balance sheet it would have been found that previous years figures are also given. As per the companies act, 1956 it is mandatory for the companies to give figures for the previous year also. Further one would have noticed the “schedule” column in the above balance sheet. The schedules attached to the balance sheet give details of the respective items.

For e.g. Schedule 3 gives details of the secured loan as given below:

Schedule 3 – Secured Loans Rs. ‘000

From banker 2004-05 2003-04

Term loan (secured by charge on certain 17,00

28,00

Plant & machinery)

Cash credit-account (secured by hypothecation 2,28,15 2,39,62

Of raw materials, stock-in-progress, finished

Goods, stocks and other current assets) 2,45,15 2,67,62

1.3.3.7 Listing Of Items On The Balance Sheet

Assets in balance sheet are generally listed in two ways – i) in the

order of liquidity or according to time i.e. In the order of the degree of ease with which they can be converted into cash or ii) in the order of permanence or according to purpose i.e., in the order of the desire to keep them in use. Some assets cannot be easily classified. For e.g. Investments can be easily sold but the desire may be to keep them. Investments may therefore be both liquid and semi-permanent that is why they are shown as a separate item in the balance sheet. Liabilities can also be grouped in two ways; either in the order of urgency of payment or in the reverse order. The various assets and liabilities grouped in the two orders will appear as follows:

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Order Of Liquidity

Liabilities

Assets

Bank Overdraft

Cash

Bills Payable

Bank

Creditors

Marketable Securities

Outstanding Expenses

Debtors

Income Received In Advance

Inventory

Provision For Income-Tax

Bills Receivable

Mortgage Loan

Prepaid Expenses

Debentures

Investments

Owners' Equity

Furniture And Fixtures

Plant And Machinery

Land And Buildings

Patents

Trade Marks

Goodwill

Preliminary Expenses

Order Of Permanence

Liabilities

Assets

Owners' Equity

Goodwill

Debentures

Trade Marks

Mortgage Loan

Patents

Provision For Income-Tax

Land And Buildings

Income Received In Advance

Plant And Machinery

Outstanding Expenses

Furniture And Fixtures

Creditors

Investments

Bills Payable

Prepaid Expenses

Inventory

Debtors

Marketable Securities

Bank

Cash

Bills Receivables

Whatever is the order, it is always better to follow the same order

for both assets and liabilities. In the illustration à' the order of liquidity

has been followed.

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1.3.3.8 Classification Of Items In The Balance Sheet

Although each individual asset or liability can be listed separately

on the balance sheet, it is more practicable and more informative to

summarize and group related items into categories called as account

classifications. The classifications or group headings will vary considerably

depending on the size of the business, the form of ownership, the nature of its operations and the users of the financial statements. For e.g. While listing assets, the order of liquidity is generally used by sole traders, partnership firms and banks, whereas joint stock companies by law follow the order of permanence. As a generalization which is subject to many exceptions, the following classification of balance sheet items is suggested as representative:

Assets

Current assets

Investments

Fixed assets

Intangible assets

Other assets

Liabilities

Current liabilities

Long term liabilities

Owners' Equity

Capital

Retained earnings

Classification Of Assets

Consumed Current Assets:

Current assets are those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business enterprise or within one year, whichever is longer. By

operating cycle we mean the average period of time between the purchase of goods or raw materials and the realisation of cash from the sale of goods or the sale of products produced with the help of raw materials. Current

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assets generally consist of cash, marketable securities, bills receivables, debtors, inventory and prepaid expenses.

Cash:

Cash consists of funds that are readily available for disbursement. It includes cash kept in the cash chest of the enterprise as also cash deposited on call or current accounts with banks.

Marketable Securities:

These consist of investments that are both readily marketable and are expected to be converted into cash within a year. These investments are made with a view to earn some return on cash that otherwise would be temporarily idle.

Accounts Receivable:

Accounts receivable consist of amounts owed to the enterprise by its consumers. This represents amounts usually arising out of normal commercial transactions. These amounts are listed in the balance sheet at the amount due less a provision for portion that may not be collected. This provision is called as provision for doubtful debts. Amounts due to the enterprise by someone other than a consumer would appear under the heading 'other receivables' rather than 'accounts receivables'.

If the amounts due are evidenced by written promises to pay, they are

listed as bills receivables. Accounts receivables are expected to be realised in cash.

Inventory:

Inventory consists of i) goods that are held in stock for sale in the ordinary course of business, ii) work-in-progress that are to be currently consumed in the production of goods or services to be available for sale.

Inventory is expected to be sold either for cash or on credit to customers to be converted into cash. It may be noted in this connection that inventory relates to goods that will be sold in the ordinary course of business. A van offered for sale by a van dealer is inventory. A van used by the dealer to make service calls is not inventory but an item of equipment which is a fixed asset.

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Prepaid Expenses:

These items represent expenses which are usually paid in advance such as rent, taxes, subscriptions and insurance. For e.g. If rent for three months for the building is paid in advance then the business acquires a right to occupy the building for three months. This right to occupy is an asset. Since this right will expire within a fairly short period of time it is a current asset.

Long Term Investments:

The distinction between a marketable security shown under current asset and as an investment is entirely based on time factor. Those investments like investments in shares, debentures, bonds etc. That will be retained for more than one year or one operating cycle will appear under

this classification.

Fixed Assets:

Tangible assets used in the business that are of a permanent or relatively fixed nature are called plant assets or fixed assets. Fixed assets include furniture, equipment, machinery, building and land. Although there is no standard criterion as to the minimum length of life necessary for classification as fixed assets, they must be capable of repeated use and are ordinarily expected to last more than a year. However the asset need not actually be used continuously or even frequently. Items of spare equipments held for use in the event of breakdown of regular equipment or for use only during peak periods of activity are also included in fixed assets.

With the passage of time, all fixed assets with the exception of land lose their capacity to render services. Accordingly the cost of such assets should be transferred to the related expense amounts in a systematic manner during their expected useful life. This periodic cost expiration is called depreciation. While showing the fixed assets in the balance sheet the accumulated depreciation as on the date of balance sheet, is deducted from the respective assets.

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Intangible Assets:

While tangible assets are concrete items which have physical existence such as buildings, machinery etc., intangible assets are those which have no physical existence. They cannot be touched and

felt. They derive their value from the right conferred upon their owner by possession. Examples are: goodwill, patents, copyrights and trademarks.

Fictitious Assets:

These items are not assets. Yet they appear in the asset side simply because of a debit balance in a particular account not yet written off – e.g. Debit balance in current account of partners, profit and loss account, etc.

Classification Of Liabilities

Current Liabilities:

When the liabilities of a business enterprise are due within an accounting period or the operating cycle of the business, they are classified as current liabilities. Most of the current liabilities are incurred in the acquisition of materials or services forming part of the current assets. These liabilities are expected to be satisfied either by the use of current assets or by the creation of other current liabilities. The one year time interval or current operating cycle criterion applies to classifying current liabilities also. Current liabilities generally consists of bills payable, creditors, outstanding expenses, income received in advance, provision for income-tax etc.

Accounts Payable:

These amounts represent the claims of suppliers related to goods supplied or services rendered by them to the business enterprise for which they have not yet been paid. Usually these claims are unsecured and are not evidenced by any formal written acceptance or promise to

pay. When the enterprise gives a written promise to pay money to a creditor for the purchase of goods or services used in the business or the money borrowed, then the written promise is called as bills payable or

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notes payable. Amounts due to financial institutions which are suppliers of funds, rather than of goods or services are termed as short-term loans or by some other name that describes the nature of the debt instrument, rather than accounts payable.

Outstanding Expenses:

These are expenses or obligations incurred in the previous accounting period but the payment for which will be made in the next accounting period. A typical example is wages or rent for the last month of the accounting period remaining unpaid. It is usually paid in the first month of the next accounting period and hence it is an outstanding expense.

Income Received In Advance:

These amounts relate to the next accounting period but received in the previous accounting period. This item of liability is frequently found in the balance sheet of enterprises dealing in the publication of newspapers and magazines.

Provision For Taxes:

This is the amount owed by the business enterprise to the government for taxes. It is shown separately from other current liabilities both because of the size and because the amount owed may not be known

exactly as on the date of balance sheet. The only thing known is the existence of liability and not the amount.

Long Term Liabilities:

All liabilities which do not become due for payment in one year and which do not require current assets for their payment are classified as long-term liabilities or fixed liabilities. Long term liabilities may be classified as secured loans or unsecured loans. When the long-term loans are obtained against the security of fixed assets owned by the enterprise, they are called as secured or mortgaged loans. When any asset is not attached to these loans they are called as unsecured loans. Usually long-term liabilities include debentures and bonds, borrowings from

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financial institutions and banks, public debts, etc. Interest accrued on a particular secured long term loan, should be shown under the appropriate sub-heading.

Contingent Liabilities:

Contingent liabilities are those liabilities which may or may not result in liability. They become liabilities only on the happening of a certain event. Until then both the amount and the liability are uncertain. If the event happens there is a liability; otherwise there is no liability at all. A very good example for contingent liability is a legal suit pending against the business enterprise for compensation. If the case is decided against the enterprise the liability arises and in the case of favourable decision there is no liability at all. Contingent liabilities are not taken into account for the

purpose of totaling of balance sheet.

Capital Or Owners' Equity:

As mentioned earlier, owners' equity is the residual interest in the assets of the enterprise. Therefore the owners' equity section of the balance sheet shows the amount the owners have invested in the entity.

However, the terminology owners' equity, varies with different forms of organisations depending upon whether the enterprise is a joint stock company or sole proprietorship / partnership concern.

Sole Proprietorship / Partnership Concern:

The ownership equity in a sole

Proprietorship or partnership is usually reported in the balance sheet as a single amount for each owner rather than distinction between the owners initial investment and the accumulated earnings retained in the business.

For e.g. In a sole-proprietor's balance sheet for the year 2011, the capital account of the owner may appear as follows:

Rs.

Owner's capital as on 1-1-2011

2,50,00

Add: 2011 – profit

30,000

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Less: 2011 – drawings

2,80,00

15,000

Owner's capital as on 31-12-2011

2,65,000

Joint Stock Companies:

In the case of joint stock companies, according to the legal requirements, owners' equity is divided into two main categories. The first category called share capital or contributed capital is the amount the owners have invested directly in the business. The second category of owners' equity is called retained earnings.

Share capital is the capital stock pre-determined by the company by the time of registration. It may consist of ordinary share capital or preference share capital or both. The capital stock is divided into units called as shares and that is why the capital is called as share capital. The entire predetermined share capital called as authorised capital need not be raised at a time. That portion of authorised capital which has been issued for subscription as on a date is referred to as issued capital.

Retained earnings is the difference between the total earning to date and the amount of dividends paid out to the shareholders to date.

That is, the difference represents that part of the total earnings that have been retained for use in the business. It may be noted that the amount of retained earnings on a given date is the accumulated amount that has been retained in the business from the beginning of the company's existence up to that date. The owners' equity increases through retained earnings and decreases when retained earnings are paid out in the form of dividends.

1.3.3.9 Summary

The profit and loss account or income statement summarizes the revenues and expenses of a business enterprise for an accounting period.

The information on the income statement is regarded by many to be more important than information on the balance sheet because the income statement reports the results of operations and enables to analyze the reasons for the enterprises' profitability or loss thereof. A close relationship

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exists between income statement and balance sheet; the statement of retained earnings which is a concomitant of income statement explains the change in retained earnings between the balance sheets prepared at the beginning and the end of the period.

Balance sheet is one of the most important financial statements which shows the financial position of a business enterprise as on a particular date. It lists as on a particular date, usually at the close of the accounting period, the assets, liabilities and capital of the enterprise.

An analysis of balance sheet together with profit and loss account will give vital information about the financial position and operations of the enterprise. The analysis becomes all the more useful and effective when a series of balance sheets and profit and loss accounts are studied.

1.3.3.10 Key Words

Income: Revenues – expenses.

Expense: Item of cost applicable to an accounting period.

Cost Of Goods Sold: Opening stock + purchase + freight – closing stock.

Gross Profit: Excess of sales revenue over cost of goods sold.

Operating Expenses: Expenses incurred for running the business.

Operating Profit: Gross profit – operating expenses.

Non Operating Expenses: Expenses which are not related to the activities of the business.

Net Profit: Amount of profit finally available to the enterprise for appropriation.

Retained Earnings:

The term retained earnings means the accumulated excess of earnings over losses and dividends.

Status Report: Financial position on a particular date.

Flow Report:

Financial position for a particular period.

Assets: costs which represent expected future economic benefits to the business enterprise.

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Liabilities:

Represent obligations which require settlement in the future.

Current Assets:

Assets which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business enterprise or within one year, whichever is longer.

Operating Cycle:

The average period of time between the purchase of goods or raw materials and the realization of cash from the sale of goods.

Fixed Assets: tangible assets used in the business that are of a permanent or relatively fixed nature.

Intangible Assets:

Those assets which have no physical existence.

Fictitious Assets:

They are not assets but appear in the asset side simply because of a debit balance in a particular account not yet written off.

Current Liabilities:

Liabilities due within an accounting period or the operating cycle of the business.

Long Term Liabilities:

Liabilities that become due for payment after one year.

Contingent Liabilities:

Items which become a liability only on the happening of a certain event.

Capital Or Owner's Equity:

This is the residual interest in the assets of the Enterprise.

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1.3.3.11 Self Assessment Questions

1. What is an expenditure? When does it become an expense?
2. What is income? How is it different from receipt?
3. Explain the following:
 - (a) gross profit
 - (b) operating profit

(c) earnings before interest and tax

(d) earnings after tax

4. What is meant by statement of retained earnings?

5. The following are the balances taken from the books of meena

ltd. On 31st december 2011:

Stock on 1-1-2011 15,000

Salaries 800

Debtors

5,000

Bank

account

3,400

Wages

8,000

Rent

2,000

Creditors 6,000

Bad debts reserve 175

Sales

40,000

Discount

allowed

250

P&l a/c 3,500

Bad debts 150

Returns inward 500

General expenses 1,300

Purchases

6,000

Insurance

300

Plant

18,000

Dividend

(interim)

575

Discounts earned 200

Capital 12,000

Cash in hand 600

Closing stock was valued at rs.9,000. Rs.500 still due to labourers.

Insurance unexpired rs.50. Provide for a bad debts reserve of 5% and a reserve for discount at 1%. Prepare trading and profit and loss account as at 31st december 2011.

6. From the following figures relating to a leading software producing company, prepare the income statement for the year ended 30th june 2012.

1. Sales

20,17,69,212

2.

Dividend

received

1,06,755

3. Costs of goods sold

5,86,88,675

4.

Interest

received

18,76,661

5.

Manufacturing

expenses

5,38,56,719

6.

Selling

expenses

81,81,822

71

7.

Administration

expenses

2,99,32,794

8.

Managerial

remuneration

1,78,200

9.

Excise

duty

48,94,360

10.

Bad

debts

16,48,157

11. Overseas project expenses

58,35,260

12.

Interest

paid

5,69,16,495

13.

Depreciation

2,33,40,163

14. Auditor's remuneration

71,488

15. Increase in stocks

9,16,30,652

16.

Other

income

94,13,004

17. Balance of profit brought forward from previous year

3,51,87,048

18. Proposed dividend

4,64,19,410

19. Transfer to general reserve

30,62,608

Also Prepare the Statement of Retained Earnings.

7. Explain the following:

(a) assets

(b) liabilities

(c) fictitious assets

(d) income received in advance

(e) investments

8. What are the two forms of presenting a balance sheet?

9. Explain owner's equity. How is it to be presented in the balance sheet?

10. From the following trail balance extracted from the books of the general traders limited as on 31st december 2005, you are required to prepare trading and profit and loss account and balance sheet:

Rs

Rs

Share capital 20,000 shares of rs.10 each

2,00,000

Stock on 1st january 2005

36,000

Sales

58,000

Salaries

5,250

Purchases

44,000

Sundry

debtors

23,000

Wages

3,000

Calls in arrears

21,500

Sundry creditors

7,200

72

Postage and telegrams

470

Advertisement

960

Preliminary expenses

7,500

Printing and stationery

640

Land and buildings

65,000

General expenses

2,200

Furniture

1,200

Repairs

650

Bad debts

910

Rent received

2,700

Machinery

30,000

Cash with bank

24,100

Cash in hand

1,520

2,67,900 2,67,900

The stock on 31st december 2011 was rs.49,000. Write off rs.2,500 out of preliminary expenses. Depreciate machinery by 10 percent and furniture by 6 percent.

11. The books of aranarasu show the following balances as on 31st december 2011. You are required to prepare a trading and profit and loss account and balance sheet.

Rs.

Rs.

Stock on 1st january 2011

67,000

Sales

5,24,600

Bills

payable

1,500

Purchases

4,88,000

Salaries and wages

9,800

Rent

1,100

Travelling expenses

2,600

Sundry

creditors

57,000

Postage and telegrams

620

General charges

2,250

Printing and stationery

350

Capital

account

75,000

Interest and commission

2,200

Lighting charges

175

73

Repairs

35

Sundry receipts

175

Furniture

3,000

Bills receivable

4,000

Bad debts

475

Sundry debtors

85,000

Aranarasu's

current

account

17,000

Cash with bank

6,500

Cash in hand

2,170

6,75,275 6,75,275

Depreciate furniture by 6 percent. Outstanding salaries and rent were

rs.1,100 and rs.100 respectively. Stock at 31st december 2011 was valued

at rs.70,350.

12. From the following balances relating to software india ltd. Prepare the

Balance sheet as at 31st december 2011.

Rs.

(a) equity capital

36,42,58,510

(b) reserves and surplus

23,58,26,861

(c) debentures

1,03,36,000

(d) secured loans

21,27,57,441

(e) fixed assets

37,07,93,048

(f) investments

5,94,80,459

(g) inventories

20,78,28,095

(h) sundry debtors

10,21,66,468

(i) cash and bank balances

1,49,87,264

(j) other current assets

57,75,568

(k) loans and advances

12,49,59,370

(l) current liabilities

4,71,71,358

(m) provisions

4,64,19,410

(n) miscellaneous expenditure

3,07,79,308

The balance sheet may be prepared in account form and report form.

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1.3.3.12 Key To Self Assessment Questions (For Problems Only)

Q.no.5: gross profit: rs.19,000; net profit: rs.14,327; profit carried to

Balance sheet: rs.17,252.

Q.no.6: net profit: rs.6,12,52,151; retained earnings balance:

Rs.4,69,57,182.

Q.no.10: gross profit: rs.24,000; net profit: rs.10,048; balance sheet

Total: rs.1,95,748.

Q.no.11: gross profit: rs.39,950; net profit: rs.19,140; balance sheet

Total: rs.1,70,840.

1.3.3.13 Case Analysis

To give a practical insight to the students about the various aspects of profit and loss account and of a balance sheet we give the financial statements as on 31st march 2012 of tt limited a yarn manufacturing company:

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Tt Limited

Balance Sheet As At 31st March, 2005

I. Sources Of

Funds

1

107490250.00

107490250.00

1. Share Capital

2

202213218.39

190240718.95

Reserve & Surplus

2. Loan Funds

3

447855991.83

423528431.00

Secured Loans

4

69532615.80

56901290.19

Unsecured Loans

3. Deferred Tax

42276806.36

43673781.36

Liability

869368882.38

821834471.50

ii. Application

of Funds

1. Fixed Assets

Gross Block

5 734104404.86

700390441.72

Less: Depreciation

217233181.41

184869109.73

Net Block

516871223.45

515521331.99

Capt. Work In

4305600.00

521176823.45

0.00

515521331.99

Progress/ Advances

2. Investments

6

1591141.57

1591642.57

3. I.Current Assets,

510807958.00

457861043.73

Loans & Advances

ii. Less: Current

Liabilities &

164207040.63

153139546.79

Provisions

7

Net Current

346600917.37

304721496.94

Assets (I-II)

869368882.38

821834471.50

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Tt Limited

Profit & Loss Account For The Year Ended 31st March, 2012

Particulars

Schedule

Current year

Previous year

Rs.

Rs.

INCOME

Sales

1656633139.30

1470167645.65

Less: Excise

9164920.45

59656449.44

Duty

8 1649235545.85

Net Sales

9 3194055.78

1410511196.21

Other Income 10 23509662.45

9178442.33

Increase

22572632.64

(Decrease)

In Stock

1675939264.08

1442262271.18

11 -----

Expenditure

Material

Manufactu-

1262208246.11

1107760578.66

ring,

12

Personnel,

13

Admin. &

308899137.99

254353516.32

Selling

47902372.00

30855197.88

Expenses etc.

Financial

expenses

34107486.97

Depre. on

Fixed

33127938.23

Assets

2906557.05

Less:

Transferred

from

31200929.92 3657679.05 29470259.18

Revaluation

Reserve

1650210686.02

1422439552.04

PROFIT

Profit Before

2000000.00

Tax

- 396975.00 25728578.06

19822719.14

Less:Provision -----

for Taxation

- for The Year

- Deferred Tax

400000.00 5150084.00

Add: Taxation

603025.00 4750084.00

Adjustment

----- 2154911.83

0.00

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Of Previous

Years (Net)

Profit After

25125553.06

16827546.97

Taxation

33458012.39

28831460.48

Add: Balance

B/F From

58583565.45

45659007.45

Previous Year

8599220.00

8599220.00

1123810.56

1101775.06

10000000.00

2500000.00

38860534.88

33458012.19

58583565.45

45659007.45

Appropriation

Dividend

1.57

Dividend

Distribution Tax

Trf. To General

2.34

Reserve

Balance Carried

Forward

Earning Per

Share (Equity

Shares, Par

Value

Rs.10 Each)

Basic & Diluted

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1.3.3.14 Books For Further Reading

1.

M.A.Arulanandam And K.S.Raman: **Advanced Accounts** ,
Himalaya Publishing House.

2.

R.L.Gupta And M.Radhaswamy: **Advanced Accounts**, Vol.I,
Sultan Chand & Sons, New Delhi.

3.

S.P.Jain And K.L.Narang: **Advanced Accounts**, Kalyani Publishers.

4.

M.C.Shukla And T.S.Grewal: **Advanced Accounts**, S.Chand & Co.
New Delhi.

5.

Tulsian: **Financial Accounting** , Pearson Education.

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Revenue Recognition

Lesson 1.4: Capital and Revenue Expenditure and Receipts

1.4.1 Introduction

In the previous lessons pertaining to the preparation of profit and loss account, the reader would have had an exposure to the concepts relating to expenses, expenditure and incomes. The term expenditure is a broad term and it is classified into capital expenditure, revenue expenditure and deferred revenue expenditure. All incomes are not receipts and all receipts are not incomes. For example, under accrual or mercantile system of accounting even income earned but not received is treated as income. Similarly all receipts are not recognised as incomes. This lesson deals with the classification of capital and revenue expenditure and receipts.

1.4.2 Learning Objectives

After reading this lesson the reader should be able to:

- ⌘ Understand capital expenditure
- ⌘ Distinguish capital expenditure from revenue expenditure
- ⌘ Identify capital receipts and revenue receipts

1.4.3 Contents

1.4.3.1. Capital Expenditure

1.4.3.2. Revenue Expenditure

1.4.3.3. Distinction Between Capital And Revenue Expenditure

1.4.3.4. Deferred Revenue Expenditure

1.4.3.5. Capital And Revenue Profits, Receipts And Losses

1.4.3.6. Illustrations

1.4.3.7. Summary

1.4.3.8. Key Words

1.4.3.9. Self Assessment Questions

1.4.3.10. Key To Self Assessment Questions

1.4.3.11. Case Analysis

1.4.3.12. Books For Further Reading

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1.4.3.1 Capital Expenditure:

Capital expenditure is that expenditure, the benefit of which is not fully consumed in one period but spread over periods i.e. The benefits are expected to accrue for a long time. Any expenditure which gives the following outcomes is a capital expenditure:

- (i) increases the capacity of an existing asset.
- (ii) increases the life of an existing asset.
- (iii) increases the earning capacity of the concern.
- (iv) results in the acquisition of a new asset.
- (v) decreases the cost of production.

Following are the examples of capital expenditure:

- (i) expenditure resulting in the acquisition of fixed assets e.g. Land, building, machines, etc.
- (ii) expenditure resulting in extension or improvement of fixed assets e.g. Amount spent on increasing the seating accommodation in the picture hall.
- (iii) expenditure in connection with installation of a fixed asset.
- (iv) expenditure incurred for acquiring the right to carry on a business e.g. Patents, copyright, etc.

(v) major repairs and replacements of parts resulting in increased efficiency of a fixed asset.

An expenditure cannot be said to be a capital expenditure only because:

(i) the amount is large.

(ii) the amount is paid in lump sum.

(iii) the amount is paid out of that fund which has been received out of the sale of fixed asset.

(iv) the receiver of the amount is going to treat it for the purchase of fixed asset.

1.4.3.2 Revenue Expenditure:

An expenditure which is consumed during the current period and which affects the income of the current period is called revenue expenditure. Also an expenditure which merely seeks to maintain the business of high assets in good working conditions is revenue expenditure.

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Following are the examples of revenue expenditure:

(i) Expenses of administration, expenses incurred in manufacturing and selling products.

(ii) Replacements for maintaining the existing permanent assets.

(iii) Costs of goods purchased for resale.

(iv) Depreciation on fixed assets, interest on loans for business, etc.

1.4.3.3 Distinction Between Capital And Revenue Expenditure:

The proper distinction between capital and revenue as regard to expenditure, payments, profits, receipts and losses is one of the fundamental

principles of correct accounting. It is very essential that in all cases this distinction should be rigidly observed and amounts rightly allocated between capital and revenue. Failure or neglect to discriminate between the two will falsify the whole of the results of accounting. However, the distinction is not always easy. In actual practice there is a good deal of difference of opinion as to whether a particular item is capital or revenue expenditure. However, the rules mentioned above may serve as a guide for making distinction between capital and revenue expenditure.

1.4.3.4 Deferred Revenue Expenditure:

A heavy expenditure of revenue nature incurred for getting benefit over a number of years is classified as deferred revenue expenditure. In some cases the benefit of revenue expenditure may be available for a period of two or three or even more years. Such expenditure is to be written off over a period of two or three years and not wholly in the year in which it is incurred. For example a new firm may advertise very heavily in the beginning to capture a position in the market. The benefit of this advertisement campaign will last quite a few years. It will be better to write off the expenditure in three or four years and not only in the first year. Some other examples of deferred revenue expenditure are preliminary expenses, brokerage on issue of shares and debentures, exceptional repairs, discount on issue of shares or debentures, expenses incurred in removing the business to more convenient premises and so on.

1.4.3.5 Capital And Revenue Profits, Receipts And Losses:

Capital and revenue profits:

Capital profit is a profit made on the sale of a fixed asset or a profit earned on getting capital for the business. For example, if the original cost of a fixed asset is rs.50,00,000 and if it is sold for rs.60,00,000 then rs.10,00,000 is capital profit. Similarly if the shares having an original cost of rs.4,000 are sold for rs.5,000, the profit of rs.1,000 thus made is capital profit. Capital profits should not be transferred to the profit and loss account but should be transferred to capital reserve which would appear as a liability in the balance sheet. Revenue profit, on the other hand, is a profit by trading, e.g. Profit on sale of goods, income from investments, discount received, commission earned, rent received, interest earned etc. Such profits are taken to profit and loss account.

Capital And Revenue Receipts:

The distinction between capital receipts and revenue receipts is also important. Money obtained from the sale of fixed assets of investments, issue of shares, debentures, money obtained by way of loans are examples of capital receipts. On the other hand, revenue receipts are cash from sales, commission received, interest on investments, transfer fees, etc. Capital receipts are shown in the balance sheet and revenue receipts in the profit and loss account.

Capital And Revenue Losses:

Capital losses are those losses which occur at selling fixed assets or raising share capital. For e.g., if investments having an original cost of rs.20,000 are sold for rs.16,000, there will be a capital loss of rs.4,000.

Similarly when the shares of the face value of rs.100 are issued for rs.90, the amount of discount i.e. Rs.10 per share will be a capital loss. Capital losses should not be debited to profit and loss account but may be shown on the asset side of balance sheet. As and when capital profits arise, losses are met against them. Revenue losses are those losses which arise during the normal course of business i.e. In trading operations such as losses on the sale of goods. Such losses are debited to profit and loss account.

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1.4.3.6 Illustrations

Illustration 1:

State which of the following expenditures are capital in nature and which are revenue in nature:

₹ Freight and cartage on the new machine rs.150; erection charges Rs.200.

₹ A sum of rs.10,000 on painting the new factory.

₹ Fixtures of the book value of rs.1,500 was sold off at rs.600 and new fixtures of the value of rs.1,000 were acquired, cartage on purchase rs.50.

₹ Rs.1,000 spent on repairs before using a second hand car purchased recently.

Solution:

₹ Capital expenditure to be debited to machinery account.

₹ Painting charges of new or old factory are maintenance charges and be charged to revenue. However, if felt proper, painting charges

of new factory may be treated as deferred revenue expenditure.

However, some say painting of new factory is capital expenditure.

₹ Loss of rs.900 on the sale of fixtures be treated as revenue expense

but the cost of new fixture rs.1,000 together with cartage rs.50 be

debited to fixture account as these are capital expenditure.

₹ Rs.1,000 being expense to bring the asset in usable condition is a

capital expenditure.

Illustration 2:

₹ The sum of rs.30,000 has been spent on a machine as follows:

₹ Rs.20,000 for additions to increase the output; rs.12,000 for repairs necessitated by negligence and rs.8,000 for replacement of worn-out parts.

₹ The sum of rs.17,200 was spent on dismantling, removing and reinstalling in order to remove their works to more suitable premises. Classify these expenses into capital and revenue.

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Solution:

₹ Rs.20,000 spent on additions is to be capitalized but rs.12,000 and rs.8,000 spent on repairs and replacement of worn-out parts respectively are to be charged to revenue.

₹ Rs.17,200 spent for removing to a more suitable premises is to be charged to revenue as it does not increase efficiency and income.

It, may, however be treated as deferred revenue at the most.

1.4.3.7 Summary

Final accounts are prepared from the balances appearing in the trial balance. All accounts appearing in the trial balance are taken to either trading and profit and loss account or balance sheet. All revenue expenditures and receipts are taken to trading and profit and loss account and all capital expenditures and receipts are taken to balance sheet. It is therefore necessary to realise the importance of distinction between capital and revenue items.

1.4.3.8 Key Words

Capital Expenditure:

It is that expenditure, the benefit of which is expected to accrue for a number of years.

Revenue Expenditure:

It is that expenditure, the benefit of which is consumed during the current year.

Capital Receipt:

Moneys obtained from sale of fixed assets, issue of capital, borrowing of loans, etc.

Revenue Receipt: cash from sales, commission received, etc. Are examples of revenue receipts.

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1.4.3.9 Self Assessment Questions

State which of the following items should be charged to capital and which to revenue:

(i) Rs.6,000 paid for removal of stock to new site.

- (ii) Rs.2,000 paid for the erection of a new machine.
- (iii)Rs.2,500 paid on the repairing of new factory.
- (iv) A car engine's rings and pistons were changed at a cost of rs.15,000; this resulted in improvement of petrol consumption to 12 km per litre; earlier it had fallen from 15 km to 8 km.

1.4.3.10 Key To Self Assessment Questions

- (i)
Deferred revenue expenditure.
- (ii) Capital expenditure.
- (iii) Capital expenditure.
- (iv) Revenue expenditure.

1.4.3.11 Case Analysis

Raja ram ltd., for which you are the accounts manager, has removed the works factory to a more suitable site. During the removal process the following stream of expenditure were incurred:

- a)A sum of rs.47,500 was spent on dismantling, removing and reinstalling plant, machinery and fixtures.
- b)The removal of stock from old works to new works cost rs.5,000.
- c)Plant and machinery which stood in books at rs.7,50,000 included a machine at a book value of rs.15,000. This being obsolete was sold off for rs.5,000 and was replaced by a new machine which costs rs.24,000.
- d)The fixtures and furniture appeared in the books at rs.75,000. Of these, some portion of the book value of rs.15,000 was discarded and sold off for rs.16,000 and new furniture of the value of rs.12,000 was acquired.

e) A sum of rs.11,000 was spent on painting the new factory.

Your accounts clerk has come to you seeking your help to classify the above expenditure as to capital expenditure and revenue expenditure. Advise him.

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Solution:

a) Rs.47,500 will have to be treated as revenue expenditure. It may be treated as deferred revenue expenditure item and spread over a term of say four to five years.

b) The cost of removal of stock from the old works to the new works does not either add to the value of the profit earning capacity of the asset and as such it should be treated as an item of revenue expenditure.

c) Rs.10,000, the difference between the book value of the machine sold and the amount realized on sale, will have to be charged off to revenue as depreciation. Rs.24,000, the cost of new machine, will have to be capitalized.

d) Rs.1,000, the difference between the book value of the fixtures and fittings discarded and the amount realized from there will be treated as capital profit and therefore be credited to capital revenue account.

Rs.12,000, the cost of new furniture, will be capitalized.

e) A sum of rs.11,000 spent on painting a new factory is capital expenditure and will be added to the cost of factory building as it is all to the new factory.

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CHAPTER-II

Lesson 2.1: Depreciation

2.1.1 Introduction

With the passage of time, all fixed assets lose their capacity to render services, the exceptions being land and antics. Accordingly, a fraction of the cost of the asset is chargeable as an expense in each of the accounting periods in which the asset renders services. The accounting process for this gradual conversion of capitalised cost of fixed assets into expense is called depreciation. This lesson explains the different aspects of depreciation.

2.1.2

Understand the meaning of depreciation.

Know the causes of depreciation.

Appreciate the need for depreciation accounting.

Evaluate the methods of depreciation.

2.1.3 Contents

2.1.3.1 Meaning Of Depreciation

2.1.3.2 Causes Of Depreciation

2.1.3.3 Need For Depreciation Accounting

2.1.3.4 Methods Of Depreciation

2.1.3.5 Straight Line Method Of Depreciations

2.1.3.6 Diminishing Balance Method

2.1.3.7 Annuity Method Of Depreciation

2.1.3.8 Summary

2.1.3.9 Key Words

2.1.3.10 Self Assessment Questions

2.1.3.11 Key To Self Assessment Questions

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2.1.3.12 Case Analysis

2.1.3.13 Books For Further Reading

2.1.3.1 Meaning Of Depreciation

In common parlance depreciation means a fall in the quality or value of an asset. But in accounting terminology, the concept of depreciation refers to the process of allocating the initial or restated input valuation of fixed assets to the several periods expected to benefit from their acquisitions and use. Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation and not of valuation.

The international accounting standards committee (iasc) (now international accounting standards board) defines depreciation as follows:

depreciation is the allocation of the depreciable amount of an asset over the estimated useful life. The useful life is in turn defined as the period over which a depreciable asset is expected to be used by the enterprise.

The depreciable amount of a depreciable asset is its historical cost in the financial statements, less the estimated residual value. Residual value or salvage value is the expected recovery or sales value of the asset at the end

of its useful life.

2.1.3.2 Causes Of Depreciation

Among other factors, the two main factors that contribute to the decline in the usefulness of fixed assets are deterioration and obsolescence.

Deterioration is the physical process wearing out whereas obsolescence refers to loss of usefulness due to the development of improved equipment or processes, changes in style or other causes not related to the physical conditions of the asset. The other causes of depreciation are:

1.

Efflux of time – mere passage of time will cause a fall in the value of an asset even if it is not used.

2.

Accidents – an asset may reduce in value because of meeting with an accident.

3.

Fall in market price – a sudden fall in the market price of

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the asset reduces its value even if it remains brand new.

2.1.3.3 Need For Depreciation Accounting

The need for depreciation accounting arises on three grounds:

(i)

To calculate proper profit: according to matching concept

of accounting, profit of any year can be calculated only when all costs of

earning revenues have been properly charged against them. Asset is an

important tool in earning revenues. The fall in the book value of assets reflects the cost of earning revenues from the use of assets in the current year and hence like other costs like wages, salary, etc., it must also be provided for proper matching of revenues with expenses.

(ii) To show true financial position: the second ground for providing depreciation is that it should result in carrying forward only that part of asset which represents the unexpired cost of expected future service. If the depreciation is not provided then the asset will appear in the balance sheet at the overstated value.

(iii) To make provision for replacement of assets: if no changes were made for depreciation, profits of the concern would be more to that extent. By making an annual charge for depreciation, a concern would be accumulating resources enough to enable it to replace an asset when necessary. Replacement, thus, does not disturb the financial position of the concern.

2.1.3.4 Methods Of Depreciation

The amount of depreciation of a fixed asset is determined taking into account the following three factors: its original cost, its recoverable cost at the time it is retired from service and the length of its life. Out of these three factors the only factor which is accurately known is the original cost of the asset. The other two factors cannot be accurately determined until the asset is retired. They must be estimated at the time the asset is placed in service. The excess of cost over the estimated residual value is the amount that is to be recorded as depreciation expense during the

assets' life-time. There are no hard and fast rules for estimating either the period of usefulness of an asset or its residual value at the end of such period. Hence these two factors, which are inter-related are affected to a

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considerable extent by management policies.

Let the reader consider the following example: a machine is purchased for rs.1,00,000 with an estimated life of five years and estimated residual value of rs.10,000. The objective of depreciation accounting is to charge this net cost of rs.90,000 (original cost – residual value) as an expense over the 5 year period. How much should be charged as an expense each year? To give an answer to this question a 100 number of methods of depreciation are available. In this lesson three such methods viz.

- 1.Straight line method,
- 2.Diminishing balance method and
- 3.Annuity method are discussed.

2.1.3.5 Straight Line Method Of Depreciation

This method which is also known as 'fixed installment system', provides for equal amount of depreciation every year. Under this method, the cost of acquisition plus the installation charges, minus the scrap value, is spread over the estimated life of the asset to arrive at the annual charge. In other words, this method writes off a fixed percentage, say 20%, of the original cost of the asset every year in such a way that the asset is reduced to nil or scrap value at the end of its life.

Evaluation:

The chief merit of this method is that it is easy to calculate depreciation, and hence, it is simple. Depreciation charge is constant from year to year, regardless of the extent of use of the asset. This method can be employed in the case of assets like furniture and fixtures, short leases, etc., which involve little capital outlay, or which have no residual value. This method is criticized on the ground that the depreciation charge remaining the same every year, cost of repairs and maintenance would be increasing as the asset becomes older. With the efficiency of the asset declining, it is unfair to charge the same amount of depreciation every year.

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2.1.3.6 Diminishing Balance Method

This method which is also known as the, 'reducing installment system', or 'written down value method', applies depreciation as a fixed percentage to the balance of the net cost of the asset not yet allocated at the end of the previous accounting period. The percentage of depreciation is so fixed that, theoretically, the balance of the unallocated cost at the end of the estimated useful life of the asset should be equal to the estimated residual value.

Evaluation:

Unlike the fixed installment system, depreciation under this method is not fixed, but gradually decreasing. As such, in the initial periods, the amount will be much higher, but negligible in the later period of the asset. Thus, this method tends to offset the amount of depreciation on the one hand and repairs and maintenance on the other. This method is

also simple, although the calculation of depreciation is a bit complicated.

Further, as and when additions are made to the asset, fresh calculations do not become necessary. This method is best suited to assets such as plant and machinery which have a long life.

Entries Required:

The entry to be made on writing off depreciation under any method is:

Depreciation a/c Dr

To

asset

a/c

The depreciation account goes to the debit of the profit and loss account.

The entry for this is:

Profit and loss a/c ... dr

To depreciation a/c

The asset appears at its reduced value in the balance sheet.

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Illustration 1:

On 1-1-2003, machinery was purchased for rs.3,00,000. Depreciation at the rate of 10% has to be written off. Write up the machinery account for three years under:

1. Straight line method (SLM) and
2. Written down value method (WDV)

Solution:

Machinery Account

Date Particulars

SLM

WDV

Date Particulars

SLM

WDV

1-1-

To Bank

3,00,000

3,00,000 31-12-

By

30,000 30,000

2003

A/C

2003

Depreciation 2,70,000 2,70,000

----- 31-12- By Balance -----

3,00,000

3,00,000

2003

C/D

3,00,000 3,00,000

1-1-

To Balance 2,70,000

2,70,000

30,000 27,000

2004

B/D

31-12-

By

2,40,000 2,43,000

2004

Depreciation -----

2,70,000

2,70,000 31-12- By Balance 2,70,000 2,70,000

2004

C/D

1-1-

To Balance 2,40,000

2,43,000

30,000 24,300

2005

B/D

2,10,000 2,18,700

----- 31-12-

By

2,40,000

2,43,000

2005

Depreciation 2,40,000 2,43,000

----- 31-12- By Balance -----

2005

C/D

1-1-

To Balance 2,10,000

2,18,700

2006

B/D

From the above illustration it can be seen that under SLM method

each year depreciation is calculated at 10% on original cost of asset i.e. On rs.3,00,000, while under WDV method each year depreciation is calculated at 10% on the written down value i.e. For e.g. In the 2nd year depreciation is calculated at 10% on rs.2,70,000 and so on.

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Illustration 2:

On 1-1-2002, machinery was purchased for rs.30,000. Depreciation at the rate of 10% on original cost was written off during the first two years. For the next two years 15% was written off the diminishing balance of the amount. The machinery was sold for rs.15,000. Write up the machinery account for four years and close the same.

Machinery Account

Date

Particulars

SLM

Date

Particulars

SLM

1-1-2002

To Bank

30,000

31-12-

By

3,000

A/C

2002

Depreciation 27,000

31-12-

By Balance -----

30,000

2002

C/D

30,000

1-1-2003 To Balance

27,000

3,000

B/D

31-12-

By

24,000

2003

Depreciation -----

27,000

31-12-

By Balance

27,000

2003

C/D

1-1-2004 To Balance 24,000

3,600

B/D

31-12-

By

2,0,400

2004

Depreciation -----

2,40,000

31-12-

(15% On

24,000

2004

24,000)

20,400

By Balance

3,060

1-1-2005 To Balance

C/D

B/D

15,000

31.12.2005

2,340

20,400

By

31.12.2005 Depreciation 20,400

31.12.2005

(15% On

20,400)

By Bank

(Sale)

By Profit &

Loss A/C

(Loss On

Sale)

95

Illustration 3:

A company, whose accounting year is the calendar year, purchased a machinery on 1-1-2003 for rs.40,000. It purchased further machinery on 1-10-2003 for rs.20,000 and on 1st july 2005 for rs.10,000. On 1-7-2006, one-fourth of the machinery installed on 1-1-2003 became obsolete and was sold for rs.6,800. Show the machinery account for all the 3 years under fixed installment system. Depreciation is to be provided at 10%p.a.

Machinery Account

Date

Particulars Rupees

Date

Particulars

Rupees

2003

2003

Jan 1

To Bank- 40,000 Dec 31

By Depreciation

Oct 10 Purchase 20,000

-On Rs.40000 For 1

4,000

To Bank-

Year

500

Purchase

Dec 31

-On Rs.20000 For 3

55,500

Month

60,000

60,000

By Balance C/D

2004

2004

Jan 1 To Balance 55,500 Dec 31

B/D

4,000

July 1 To Bank-

2,000

Purchase 10,000

By Depreciation

500

Dec 31

-On Rs.40000 For 1

59,000

Year

65,500

-On Rs.20000 For 1

65,500

Year

-On Rs.10000 For 6

Month

2005

By Balance C/D

59,000

July 1

500

July 1

6,800

July 1

700

2005 To Balance

Jan 1

B/D

Dec 31

By Depreciation

3,000

On Machine Sold

2,000

By Bank-Sale

1,000

By P&L A/C (Loss On

45,000

Sale)

59,000

By Depreciation

59,000

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-On Rs.30000 For 1 Year

-On Rs.20000 For 1 Year

-On Rs.10000 For 1 Year

By Balance C/D

Working Notes – Loss On Sale Of Machinery

Original cost of machinery on 1-1-2003:

= 10,000

Less depreciation for 2003 at 10% 1,000 ($4000 \times \frac{1}{4}$)

= 1,000

Book value on 1-1-2004

9,000

Less depreciation for 2004 at 10% on 10,000

1,000

Book value on 1-1-2005

8,000

Less depreciation upto 1-7-2005 at 10% on 10000

500

Book value on date of sale

7,500

Less sale proceeds

6,800

Loss on sale

700

2.1.3.7 Annuity Method Of Depreciation

Under the first two methods of depreciation the interest aspect has been ignored. Under this method, the amount spent on the acquisition of an asset is regarded as investment which is assumed to earn interest at a certain rate. Every year the asset is debited with the amount of interest and credited with the amount of depreciation. This interest is calculated on the debit balance of the asset account at the beginning of the year. The amount to be written off as depreciation is calculated from the annuity table an extract of which is given below:

Years 3%

3.5%

4%

4.5%

5%

3 0.353530

0.359634

0.360349

0.363773

0.367209

4

0.269027

0.272251

0.275490

0.278744

0.282012

5 0.218355

0.221481

0.224627

0.227792

0.230975

The amount to be written off as depreciation is ascertained from

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the annuity table and the same depends upon the rate of interest and the period over which the asset is to be written off. The rate of interest and the amount of depreciation would be adjusted in such a way that at the end of its working life, the value of the asset would be reduced to nil or its scrap value.

Evaluation:

This method has the merit of treating purchase of an asset as an investment within the business, and the same is supposed to earn interest.

However, calculations become difficult when additions are made to the asset. The method is suitable only for long leases and other assets to which additions are not usually made and as such in case of machinery, this method is not found suitable.

Illustration 4:

A lease is purchased for a term of 4 years by payment of rs.1,00,000.

It is proposed to depreciate the lease by annuity method charging 4% interest. If annuity of re.1 for 4 years at 4% is 0.275490, show the lease account for the full period.

$$\begin{aligned} \text{Amount of annual depreciation} &= \text{rs.1,00,000} \times \text{re.0.275490} \\ &= \text{rs.27,549} \end{aligned}$$

Lease Account

Date

Particulars

Rupees

Date

Particulars

Rupees

1 s t

To Bank

100000.00 1st By Depreciation

27549.00

Year To Interest At 4%

4000.00 Year By Balance C/D

76451.00

104000.00

104000.00

2nd To Balance B/D

76451.00 2nd By Depreciation

27549.00

Year To Interest At 4%

3058.04 Year By Balance C/D

51960.04

79509.04

79509.04

3 r d To Balance B/D

51960.04 3rd By Depreciation

27549.00

Year To Interest At 4%

2078.40 Year By Balance C/D

26489.44

54038.44

54038.44

98

4th To Balance B/D

26489.44 4th By Depreciation

27549.00

Year To Interest At 4%

1059.56 Year

(Adjusted)

27549.00

27549.00

2.1.3.8 Summary

Though depreciation to a common man means a fall in the value of an asset, actually it is not a process of valuation. It is a process of cost allocation. Through depreciation accounting the cost of a tangible asset

less salvage value, if any, is distributed over the estimated useful life of the asset. Depreciation is to be accounted to know the true profit earned by the concern, to exhibit a true and fair view of the state of assets of the concern and to provide funds for replacement of the asset when it is worn out. Among the number of methods of depreciation available three methods, viz. Straight line method, diminishing balance method and annuity method are discussed.

2.1.3.9 Key Words

Depreciable Asset: It is that asset on which depreciation is written off.

Depreciation: It is the allocation of the depreciable amount of an asset over estimated useful life.

Useful Life: It is the period over which a depreciable asset is expected to be used by the enterprise.

Depreciable Amount: The depreciable amount of a depreciable asset is its historical cost less estimated residual value.

Residual Value: It is the expected recovery or sales value of an asset at the end of its useful life.

2.1.3.10 Self Assessment Questions

Question 1:

A manufacturing concern, whose books are closed on 31st

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march, purchased machinery for rs.1,50,000 on 1st april 2002. Additional machinery was acquired for rs.40,000 on 30th september 2003 and for rs.25,000 on 1st april 2005. Certain machinery which was purchased for

rs.40,000 on 30th september 2003 was sold for rs.34,000 on 30th september

2005. Give the machinery account for the year ending 31st march 2006

taking into account depreciation at 10% p.a. On the written down value.

Question 2:

A seven years lease has been purchased for a sum of rs.60,000

and it is proposed to depreciate it under the annuity method charging 4%

interest. Reference to the annuity table indicates that the required result

will be brought about by charging annually rs.9996.55 to depreciation

account. Show how the lease account will appear in each of the seven years.

Question 3:

Examine the need for providing depreciation.

2.1.3.11 Key To Self Assessment Questions

Question 1: Machinery Account

2005 2005

April 1 to balance b/d

1,43,550

Sep 30 by depreciation 1,710

Sep 30 to bank

25,000

by bank

34,000

to p&l a/c

1,510

2006 by depreciation 13,435

(profit on sale)

mar 31 by balance c/d 1,20,915

1,70,060

1,70,060

Question 2:

Interest for seven years:

1st year: rs.2,400; 2nd year: rs.2,096.14; 3rd year: rs.1,780.12; 4th year:

Rs.1,451.46; 5th year: rs.1,109.66; 6th year: rs.754.19; 7th year: rs.384.28.

2.1.3.12 Case Analysis

Pondicherry roadways ltd. Which depreciates its machinery at

10% p.a. On written down value desires to change the basis to straight

line method, the rate remaining the same. The decision is taken on 31st

december 2005 to be effective from 1st january 2003.

On 1st january 2005, the balance in the machinery account is rs.29,16,000.

On 1st july 2005, a part of machinery purchased on 1st january 2003 for

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rs.2,40,000 was sold for rs.1,35,000. On the same day a new machine is

purchased for rs.4,50,000 and installed at a cost of rs.24,000.

Analyze the above case and answer the following questions:

(i)

What was the loss incurred on the machine sold?

(ii)

What was the book value of unsold machinery on 1-1-2003.

(iii)

What would be the additional depreciation due to change in method?

(iv)

What should be the depreciation to be charged for 2005?

Answers:

(i) Rs.49,680

(ii) Rs.33,60,000

(iii)Rs.33,600

(iv)Rs.3,59,700

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UNIT-II

Lesson 2.2: Ratio Analysis

2.2..1 Introduction

Financial statements by themselves do not give the required information both for internal management and for outsiders. They are passive statements showing the results of the business i.e. Profit or loss and the financial position of the business. They will not disclose any reasons for dismal performance of the business if it is so. What is wrong with the business, where it went wrong, why it went wrong, etc. Are some of the questions for which no answers will be available in the financial statements. Similarly, no information will be available in the financial statements about the financial strengths and weaknesses of

the concern. Hence, to get meaningful information from the financial statements which would facilitate vital decisions to be taken, financial statements must be analysed and interpreted. Through the analysis and interpretation of financial statements full diagnosis of the profitability and financial soundness of the business is made possible. The term 'analysis of financial statements' means methodical classification of the data given in the financial statements. The term 'interpretation of financial statements' means explaining the meaning and significance of the data so classified. A number of tools are available for the purpose of analysing and interpreting the financial statements. This lesson discusses in brief tools like common size statement, trend analysis, etc., and gives a detailed discussion on ratio analysis.

2.2.2

After reading this lesson the reader should be able to:

- understand the nature and types of financial analysis
- know the various tools of financial analysis
- understand the meaning of ratio analysis
- appreciate the significance of ratio analysis
- understand the calculation of various kinds of ratios
- calculate the different ratios from the given financial statements
- interpret the calculated ratios

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2.2.3 Contents

2.2.3.1 Nature Of Financial Analysis

2.2.3.2 Types Of Financial Analysis

2.2.3.3 Tools Of Financial Analysis

2.2.3.4 Meaning And Nature Of Ratio Analysis

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2.2.3.6 Capital Structure Or Leverage Ratios

2.2.3.7 Fixed Assets Analysis

2.2.3.8 Analysis Of Turnover (Or) Analysis Of Efficiency

2.2.3.9 Analysis Of Liquidity Position

2.2.3.10 Analysis Of Profitability

2.2.3.11 Analysis Of Operational Efficiency

2.2.3.12 Ratios From Share Holders' Point Of View

2.2.3.13 Illustrations

2.2.3.14 Summary

2.2.3.15 Key Words

2.2.3.16 Self Assessment Questions

2.2.3.17 Key To Self Assessment Questions

2.2.3.18 Case Analysis

2.2.3.1 Nature Of Financial Analysis

The focus of financial analysis is on the key figures contained in the financial statements and the significant relationship that exists between them. “analyzing financial statements is a process of evaluating the relationship between the component parts of the financial statements to obtain a better understanding of a firm’s position and performance”.

The type of relationship to be investigated depends upon the objective and

purpose of evaluation. The purpose of evaluation of financial statements differs among various groups: creditors, shareholders, potential investors, management and so on. For example, short-term creditors are primarily interested in judging the firm's ability to pay its currently-maturing obligations. The relevant information for them is the composition of the short-term (current) liabilities. The debenture-holders or financial institutions granting long-term loans would be concerned with examining the capital structures, past and projected earnings and changes in the financial position. The shareholders as well as potential investors would

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naturally be interested in the earnings per share and dividends per share as these factors are likely to have a significant bearing on the market price of shares. The management of the firms, in contrast, analyses the financial statements for self-evaluation and decision making.

The first task of the financial analyst is to select the information relevant to the decision under consideration from the total information contained in the financial statements. The second step involved in financial analysis is to arrange the information in such a way as to highlight significant relationships. The final step is the interpretation and drawing of inferences and conclusions. In brief, financial analysis is the process of selection, relation and evaluation.

2.1.3.2 Types Of Financial Analysis

Financial analysis may be classified on the basis of parties who are undertaking the analysis and on the basis of methodology of analysis. On

the basis of the parties who are doing the analysis, financial analysis is classified into external analysis and internal analysis.

External Analysis:

When the parties external to the business like creditors, investors, etc. Do the analysis, the analysis is known as external analysis. This analysis is done by them to know the credit-worthiness of the concern, its financial viability, its profitability, etc.

Internal Analysis:

This analysis is done by persons who have control over the books of accounts and other information of the concern. Normally this analysis is done by management people to enable them to get relevant information to take vital business decision.

On the basis of methodology adopted for analysis, financial analysis may be either horizontal analysis or vertical analysis.

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Horizontal Analysis:

When financial statements of a number of years are analysed, then the analysis is known as horizontal analysis. In this type of analysis, figures of the current year are compared with the standard or base year. This type of analysis will give an insight into the concern's performance over a period of years. This analysis is otherwise called as dynamic analysis as it extends over a number of years.

Vertical Analysis:

This type of analysis establishes a quantitative relationship of the

various items in the financial statements on a particular date. For e.g. The ratios of various expenditure items in terms of sales for a particular year can be calculated. The other name for this analysis is 'static analysis' as it relies upon one year figures only.

2.1.3.3 Tools Of Financial Analysis

The following are the important tools of financial analysis which can be appropriately used by the financial analysts:

1. Common-size financial statements
2. Comparative financial statements
3. Trend percentages
4. Ratio analysis
5. Funds flow analysis
6. Cash flow analysis

Common-Size Financial Statements:

In this type of statements, figures in the original financial statements are converted into percentages in relation to a common base. The common base may be sales in the case of income statements (profit and loss account) and total of assets or liabilities in the case of balance sheet. For e.g. In the case of common-size income statement, sales of the traditional financial statement are taken as 100 and every other item in the income statement is converted into percentages with reference to sales. Similarly, in the case of common-size balance sheet, the total of asset/liability side will be taken as 100 and each individual asset/liability is converted into relevant percentages.

Comparative Financial Statements:

This type of financial statements are ideal for carrying out horizontal analysis. Comparative financial statements are so designed to give them perspective to the review and analysis of the various elements of profitability and financial position displayed in such statements. In these statements, figures for two or more periods are compared to find out the changes both in absolute figures and in percentages that have taken place in the latest year as compared to the previous year(s). Comparative financial statements can be prepared both for income statement and balance sheet.

Trend Percentages:

Analysis of one year figures or analysis of even two years figures will not reveal the real trend of profitability or financial stability or otherwise of any concern. To get an idea about how consistent is the performance of a concern, figures of a number of years must be analysed and compared. Here comes the role of trend percentages and the analysis which is done with the help of these percentages is called as trend analysis.

Trend analysis:

Is a useful tool for the management since it reduces the large amount of absolute data into a simple and easily readable form. The trend analysis is studied by various methods. The most popular forms of trend analysis are year to year trend change percentage and index-number trend series. The year to year trend change percentage would be meaningful and manageable where the trend for a few years, say a five year or six year period is to be analysed.

Generally trend percentage are calculated only for some important items which can be logically related with each other. For e.g. Trend ratio for sales, though shows a clear-cut increasing tendency, becomes meaningful in the real sense when it is compared with cost of goods sold which might have increased at a lower level.

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Ratio Analysis:

Of all the tools of financial analysis available with a financial analyst the most important and the most widely used tool is ratio analysis. Simply stated ratio analysis is an analysis of financial statements done with the help of ratios. A ratio expresses the relationship that exists between two numbers and in financial statement analysis a ratio shows the relationship between two interrelated accounting figures. Both the accounting figures may be taken from the balance sheet and the resulting ratio is called a balance sheet ratio. But if both the figures are taken from profit and loss account then the resulting ratio is called as profit and loss account ratio. Composite ratio is that ratio which is calculated by taking one figure from profit and loss account and the other figure from balance sheet. A detailed discussion on ratio analysis is made available in the pages to come.

Funds Flow Analysis:

The purpose of this analysis is to go beyond and behind the information contained in the financial statements. Income statement tells the quantum of profit earned or loss suffered for a particular accounting year. Balance sheet gives the assets and liabilities position as on a particular

date. But in an accounting year a number of financial transactions take place which have a bearing on the performance of the concern but which are not revealed by the financial statements. For e.g. A concern collects finance through various sources and uses them for various purposes. But these details could not be known from the traditional financial statements. Funds flow analysis gives an opening in this respect. All the more, funds flow analysis reveals the changes in working capital position. If there is an increase in working capital what resulted in the increase and if there is a decrease in working capital what caused the decrease, etc. Will be made available through funds flow analysis.

Cash Flow Analysis:

While funds flow analysis studies the reasons for the changes in working capital by analysing the sources and application of funds, cash flow analysis pays attention to the changes in cash position that has taken place between two accounting periods. These reasons are not available in the traditional financial statements. Changes in the cash position can

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be analysed with the help of a statement known as cash flow statement.

A cash flow statement summarises the change in cash position of the concern. Transactions which increase the cash position of the concern are labelled as 'inflows' of cash and those which decrease the cash position as 'outflows' of cash.

2.2.3.4 Meaning And Nature of Ratio Analysis

Ratio expresses numerical relationship between two numbers.

In the words of Kennedy and McMullen, “the relationship of one item to another expressed in simple mathematical form is known as a ratio”. Thus, the ratio is a measuring device to judge the growth, development and present condition of a concern. It plays an important role in measuring the comparative significance of the income and position statement. Accounting ratios are expressed in the form of time, proportion, percentage, or per one rupee. Ratio analysis is not only a technique to point out relationship between two figures but also points out the devices to measure the fundamental strengths or weaknesses of a concern. As James C. Van Horne observes: “to evaluate the financial condition and performance of a firm, the financial analyst needs certain yardsticks. One of the yardsticks frequently used is a ratio. The main purpose of ratio analysis is to measure past performance and project future trends. It is also used for inter-firm and intra-firm comparison as a measure of comparative productivity. The significance of the various components of financial statements can be judged only by ratio analysis. The financial analyst x-rays the financial conditions of a concern by the use of various ratios and if the conditions are not found to be favourable, suitable steps can be taken to overcome the limitations. The main objectives of ratio analysis are:

- ⌘ To simplify the comparative picture of financial statements.
- ⌘ To assist the management in decision making.
- ⌘ To gauge the profitability, solvency and efficiency of an enterprise, and
- ⌘ To ascertain the rate and direction of change and future potentiality.

2.2.3.5 Classification of Ratios

Financial ratios may be categorised in various ways. Van horne has divided financial ratios into four categories, viz., liquidity, debt, profitability and coverage ratios. The first two types of ratios are computed from the balance sheet. The last two are computed from the income statement and sometimes, from both the statements. For the purpose of analysis, the present lesson gives a detailed description of ratios, the formula used for their computation and their significance. The ratios have been categorised under the following headings:-

- (i)
ratios for analysis of capital structure or leverage.
- (ii) ratios for fixed assets analysis.
- (iii) ratios for analysis of turnover.
- (iv) ratios for analysis of liquidity position.
- (v)
ratios for analysis of profitability.
- (vi) ratios for analysis of operational efficiency.

2.2.3.6 Capital Structure or Leverage Ratios

Financial strength indicates the soundness of the financial resources of an organisation to perform its operations in the long run. The parties associated with the organisation are interested in knowing the financial strength of the organisation. Financial strength is directly associated with the operational ability of the organisation and its efficient management of

resources. The financial strength analysis can be made with the help of the

following ratios:

(1)

Debt-equity ratio

(2)

Capital gearing ratio

(3)

Financial leverage

(4)

Proprietary ratio and

(5)

Interest coverage.

Debt-Equity Ratio:

The debt-equity ratio is determined to ascertain the soundness of the long-term financial policies of the company. This ratio indicates the proportion between the shareholders' funds (i.e. Tangible net worth) and the total borrowed funds. Ideal ratio is 1. In other words, the investor may take debt equity ratio as quite satisfactory if shareholders' funds are equal

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to borrowed funds. However, creditors would prefer a low debt-equity ratio as they are much concerned about the security of their investment.

This ratio can be calculated by dividing the total debt by shareholders' equity. For the purpose of calculation of this ratio, the term shareholders' equity includes share capital, reserves and surplus and borrowed funds

which includes both long-term funds and short-term funds.

Debt

Debt-equity ratio =

Equity

A high ratio indicates that the claims of creditors are higher as compared to owners' funds and a low debt-equity ratio may result in a higher claim of equity.

Capital Gearing Ratio: This ratio establishes the relationship between the fixed interest-bearing securities and equity shares of a company. It is calculated as follows:

Fixed

interest-bearing

securities

Capital gearing ratio =

Equity shareholders' funds

Fixed-interest bearing securities carry with them the fixed rate of dividend or interest and include preference share capital and debentures. A firm is said to be highly geared if the lion's share of the total capital is in the form of fixed interest-bearing securities or this ratio is more than one. If this ratio is less than one, it is said to be low geared. If it is exactly one, it is evenly geared. This ratio must be carefully planned as it affects the firm's capacity to maintain a uniform dividend policy during difficult trading

periods that may occur. Too much capital should not be raised by way of debentures, because debentures do not share in business losses.

Financial Leverage Ratio:

Financial leverage results from the presence of fixed financial charges in the firm's income stream. These fixed charges do not vary with the earnings before interest and tax (ebit) or operating profits. They have to be paid regardless of the amount of earnings before interest and taxes available to pay them. After paying them, the operating profits (ebit) belong to the ordinary shareholders. Financial leverage is concerned with the effects of changes in earnings before interest and taxes on the

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earnings available to equity holders. It is defined as the ability of a firm to use fixed financial charges to magnify the effects of changes in ebit on the firm's earning per share. Financial leverage and trading on equity are synonymous terms. The ebit is calculated by adding back the interest (interest on loan capital + interest on long term loans + interest on other loans) and taxes to the amount of net profit. Financial leverage ratio is calculated by dividing ebit by ebt (earnings before tax). Neither a very high leverage nor a very low leverage represents a sound picture.

$(\text{ebit} \div \text{ebt})$.

Proprietary Ratio:

This ratio establishes the relationship between the proprietors' funds and the total tangible assets. The general financial strength of a firm can be understood from this ratio. The ratio is of particular importance to

the creditors who can find out the proportion of shareholders' funds in the capital assets employed in the business. A high ratio shows that a concern is less dependent on outside funds for capital. A high ratio suggests sound financial strength of a firm due to greater margin of owners' funds against outside sources of finance and a greater margin of safety for the creditors.

A low ratio indicates a small amount of owners' funds to finance total assets and more dependence on outside funds for working capital. In the form of formula this ratio can be expressed as:-

Net Worth

Proprietary Ratio

=

Total Assets

Interest Coverage:

This ratio measures the debt servicing capacity of a firm in so far as fixed interest on long-term loan is concerned. It is determined by dividing the operating profits or earnings before interest and taxes (ebit) by the fixed interest charges on loans. Thus,

EBIT

Interest Coverage

=

Interest

It should be noted that this ratio uses the concept of net profits

before taxes because interest is tax-deductible so that tax is calculated after paying interest on long-term loans. This ratio, as the name suggests, shows how many times the interest charges are covered by the ebit out of which they will be paid. In other words, it indicates the extent to which a fall in ebit is tolerable in the sense that the ability of the firm to service its debts would not be adversely affected. From the point of view of creditors, the larger the coverage, the greater the ability of the firm to handle fixed-charge liabilities and the more assured the payment of interest to the creditors. However, too high a ratio may imply unused debt capacity. In contrast, a low ratio is danger signal that the firm is using excessive debt and does not have the ability to offer assured payment of interest to the creditors.

2.2.3.7 Fixed Assets Analysis

The successful operation of a business generally requires some assets of fixed character. These assets are used primarily in producing goods and in operating the business. With the help of these, raw materials are converted into finished products. Fixed assets are not meant for sale and are kept as a rule permanently in the business in order to carry on day-to-day operations.

Analysis of fixed assets is very important from investors' point of view because investors are more concerned with long term assets. Fixed assets are properties of non-current nature which are acquired to provide facilities to carry on business. They include land, building, equipment,

furniture, etc. They are generally shown in balance sheet by aggregating them into groups of gross block as reduced by the accumulated amount of depreciation till date. Investment in fixed assets is of a permanent nature and therefore should be financed by owners' funds (permanent sources of funds). The owners' funds should be sufficient to provide for fixed assets. Fixed assets are generally financed by owners' equity and long-term borrowings. The long-term borrowings are in the form of long-term loans and of almost permanent nature. Under such a situation it becomes more or less irrelevant to relate the fixed assets with only the owners' equity. Therefore, the analysis of the source of financing of fixed assets has been done with the help of the following ratios:-

(a)

Fixed Assets To Net Worth

(b) Fixed Assets To Long-Term Funds

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Fixed Assets To Net Worth: in the words of anil b.roy choudhary, "this ratio indicates the relationship between net worth (i.e. Shareholders' funds) and investments in net fixed assets (i.e. Gross block minus depreciation)".

The higher the ratio the lesser would be the protection to creditors. If the ratio is less than 1, it indicates that the net worth exceeds fixed assets. It will further indicate that the working capital is partly financed by shareholders' funds. If the ratio exceeds 1, it would mean that part of the fixed assets has been provided by creditors. The formula for derivation of this ratio is:-

Net Fixed Assets

Fixed Assets To Net Worth Ratio =

Net Worth

Fixed Assets To Long-Term Funds: this ratio establishes the relationship

Between the fixed assets and long-term funds and it is obtained by the formula:

Fixed Assets

FIXED ASSET RATIO

= -----

Long-Term

Funds

The ratio should be less than one. If it is less than one, it shows that a part of the working capital has been financed through long-term funds.

This is desirable because a part of working capital termed as “core working capital” is more or less of a fixed nature. The ideal ratio is 0.67.

If this ratio is more than one, it indicates that a part of current liability is invested in long-term assets. This is a dangerous position. Fixed assets include “net fixed assets” i.e. Original cost less depreciation to date and trade investments including shares in subsidiaries. Long-term funds include share capital, reserves and long-term borrowings.

2.2.3.8 Analysis Of Turnover (Or) Analysis Of Efficiency

Turnover ratios also referred to as activity ratios are concerned with measuring the efficiency in asset management. Sometimes, these

ratios are also called as efficiency ratios or asset utilisation ratios. The efficiency with which the assets are used would be reflected in the speed and rapidity with which assets are converted into sales. The greater the rate

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of turnover or conversion, the more efficient the utilisation/management, other things being equal. For this reason such ratios are also designated as turnover ratios. Turnover is the primary mode for measuring the extent of efficient employment of assets by relating the assets to sales. An activity ratio may, therefore, be defined as a test of the relationship between sales (more appropriately with cost of sales) and the various assets of a firm.

Depending upon the various types of assets, there are various types of activity ratios. Some of the more widely used turnover ratios are:-

⌘ Fixed Assets Turnover Ratio

⌘ Current Assets Turnover Ratio

⌘ Working Assets Turnover Ratio

⌘ Inventory (Or Stock) Turnover Ratio

⌘ Debtors Turnover Ratio

⌘ Creditors Turnover Ratio

Fixed Assets Turnover Ratio:

The fixed assets turnover ratio measures the efficiency with which the firm is utilising its investment in fixed assets, such as land, building, plant and machinery, furniture, etc. It also indicates the adequacy of sales in relation to investment in fixed assets. The fixed assets turnover ratio is sales divided by the net fixed assets (i.e., the depreciated value of fixed

assets).

Sales

Fixed Assets Turnover Ratio =

Net Fixed Assets

The turnover of fixed assets can provide a good indicator for judging the efficiency with which fixed assets are utilised in the firm. A high fixed assets turnover ratio indicates efficient utilisation of fixed assets in generating operating revenue. A low ratio signifies idle capacity, inefficient utilisation and management of fixed assets.

Current Assets Turnover Ratio:

The current assets turnover ratio ascertains the efficiency with which current assets are used in a business. Professor Guthmann observes that “current assets turnover is to give an overall impression of how rapidly the total investment in current assets is being turned”. This ratio is strongly associated with efficient utilisation of costs, receivables and inventory. A

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higher value of this ratio indicates greater circulation of current assets while a low ratio indicates a stagnation of the flow of current assets. The formula for the computation of current assets turnover ratio is:

Sales

Current Assets Turnover Ratio

=

Current Assets

Working Capital Turnover Ratio: this ratio shows the number of times working capital is turned-over in a stated period. Working capital turnover ratio reflects the extent to which a business is operating on a small amount of working capital in relation to sales. The ratio is calculated by the following formula:-

Sales

Working Capital Turnover Ratio =

Net Working Capital

The higher the ratio, the lower is the investment in working capital and greater are the profits. However, a very high turnover of working capital is a sign of over trading and may put the firm into financial difficulties. On the other hand, a low working capital turnover ratio indicates that working capital is not efficiently utilised.

Inventory Turnover Ratio:

The inventory turnover ratio, also known as stock turnover ratio normally establishes the relationship between cost of goods sold and average inventory. This ratio indicates whether investment in inventory is within proper limit or not. In the words of S.C.Kuchal, “this relationship expresses the frequency with which average level of inventory investment is turned over through operations”. The formula for the computation of this ratio may be expressed thus:

Cost Of Goods Sold

Inventory Turnover Ratio =

Average Inventory

In general, a high inventory turnover ratio is better than a low ratio. A high ratio implies good inventory management. A very high

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ratio indicates under-investment in, or very low level of inventory which results in the firm being out of stock and incurring high stock-out cost.

A very low inventory turnover ratio is dangerous. It signifies excessive inventory or over-investment in inventory. A very low ratio may be the results of inferior quality goods, over-valuation of closing inventory, stock of unsaleable/obsolete goods.

Debtors Turnover Ratio And Collection Period:

One of the major activity ratios is the receivables or debtors turnover ratio. Allied and closely related to this is the average collection period. It shows how quickly receivables or debtors are converted into cash. In other words, the debtors turnover ratio is a test of the liquidity of the debtors of a firm. The liquidity of a firm's receivables can be examined in two ways: (i) debtors/receivables turnover and (ii) average collection period. The debtors turnover shows the relationship between credit sales and debtors of a firm. Thus,

Net

Credit

Sales

Debtors Turnover Ratio = -----

Average

Debtors

Net credit sales consists of gross credit sales minus returns if any, from the customers. Average debtors is the simple average of debtors at the beginning and at the end of the year.

The second type of ratio measuring the liquidity of a firm's debtors is the average collection period. This ratio is, in fact, interrelated with and dependent upon, the receivables turnover ratio. It is calculated by dividing the days in a year by the debtors turnover. Thus,

Days In Year

Average Collection Period = -----

Debtors Turnover

This ratio indicates the speed with which debtors/accounts receivables are being collected. The higher the turnover ratio and shorter the average collection period, the better the trade credit management and better the liquidity of debtors. On the other hand, low turnover ratio and

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long collection period reflects that payments by debtors are delayed. In general, short collection period (high turnover ratio) is preferable.

Creditors' Turnover Ratio And Debt Payment Period:

Creditors' turnover ratio indicates the speed with which the payments for credit purchases are made to the creditors. This ratio can be computed as follows:-

Average Accounts Payable

Creditors' Turnover Ratio = -----

Net Credit Purchases

The term accounts payable include trade creditors and bills payable.

A high ratio indicates that creditors are not paid in time while a low ratio gives an idea that the business is not taking full advantage of credit period allowed by the creditors.

Sometimes, it is also required to calculate the average payment period or average age of payables or debt period enjoyed to indicate the speed with which payments for credit purchases are made to creditors. It is calculated as:

Days In A Year

Average Age Of Payables = -----

Creditors'

Turnover

Ratio

Both the creditors' turnover ratio and the debt payment period enjoyed ratio indicate about the promptness or otherwise in making payment for credit purchases. A higher creditors' turnover ratio or lower credit period enjoyed ratio signifies that the creditors are being paid promptly.

2.2.3.9 Analysis Of Liquidity Position

The liquidity ratios measure the ability of a firm to meet its short-term obligations and reflect the short-term financial strength/solvency of

a firm. The term liquidity is described as convertibility of assets ultimately into cash in the course of normal business operations and the maintenance of a regular cash flow. A sound liquid position is of primary concern to management from the point of view of meeting current liabilities as and when they mature as well as for assuring continuity of operations. Liquidity

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position of a firm depends upon the amount invested in current assets and the nature of current assets. The under mentioned ratios are used to measure the liquidity position:-

⌘ current ratio

⌘ liquid (or) quick ratio

⌘ cash to current assets ratio

⌘ cash to working capital ratio

Current Ratio:

The most widely used measure of liquid position of an enterprise is the current ratio, i.e., the ratio of the firm's current assets to current liabilities. It is calculated by dividing current assets by current liabilities:

Current Assets

Current Ratio = -----

Current

Liabilities

The current assets of a firm represent those assets which can be in the ordinary course of business, converted into cash within a short period of time, normally not exceeding one year and include cash and

bank balance, marketable securities, inventory of raw materials, semi-finished (work-in-progress) and finished goods, debtors net of provision for bad and doubtful debts, bills receivable and pre-paid expenses. The current liabilities defined as liabilities which are short-term maturing obligations to be met, as originally contemplated, within a year, consist of trade creditors, bills payable, bank credit, provision for taxation, dividends payable and outstanding expenses. N.I.hingorani and others observe:

“current ratio is a tool for measuring the short-term stability or ability of the company to carry on its day-to-day work and meet the short-term commitments earlier”. Generally 2:1 is considered ideal for a concern i.e., current assets should be twice of the current liabilities. If the current assets are two times of the current liabilities, there will be no adverse effect on business operations when the payment of current liabilities is made. If the ratio is less than 2, difficulty may be experienced in the payment of current liabilities and day-to-day operations of the business may suffer. If the ratio is higher than 2, it is very comfortable for the creditors but, for the concern, it indicates idle funds and lack of enthusiasm for work.

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Liquid (Or) Quick Ratio: liquid (or) quick ratio is a measurement of a firm's ability to convert its current assets quickly into cash in order to meet its current liabilities. It is a measure of judging the immediate ability of the firm to pay-off its current obligations. It is calculated by dividing the quick assets by current liabilities:

Quick Assets

Liquid Ratio = -----

Current

Liabilities

The term quick assets refers to current assets which can be converted into cash immediately or at a short notice without diminution of value.

Thus quick assets consists of cash, marketable securities and accounts receivable. Inventories are excluded from quick assets because they are slower to convert into cash and generally exhibit more uncertainty as to the conversion price.

This ratio provides a more stringent test of solvency. 1:1 ratio is considered ideal ratio for a firm because it is wise to keep the liquid assets atleast equal to the current liabilities at all times.

Cash To Current Assets Ratio:

Efficient management of the inflow and outflow of cash plays a crucial role in the overall performance of a business. Cash is the most liquid form of assets which safeguards the security interest of a business.

Cash including bank balances plays a vital role in the total net working capital. The ratio of cash to working capital signifies the proportion of cash to the total net working capital and can be calculated by dividing the cash including bank balance by the working capital. Thus,

Cash

Cash To Working Capital Ratio = -----

Working Capital

Cash is not an end in itself, it is a means to achieve the end.

Therefore, only a required amount of cash is necessary to meet day-to-day operations. A higher proportion of cash may lead to shrinkage of profits due to idleness of resources of a firm.

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2.2.3.10 Analysis Of Profitability

Profitability is a measure of efficiency and control. It indicates the efficiency or effectiveness with which the operations of the business are carried on. Poor operational performance may result in poor sales and therefore low profits. Low profitability may be due to lack of control over expenses resulting in low profits. Profitability ratios are employed by management in order to assess how efficiently they carry on business operations. Profitability is the main base for liquidity as well as solvency. Creditors, banks and financial institutions are interested in profitability ratios since they indicate liquidity or capacity of the business to meet interest obligations and regular and improved profits enhance the long term solvency position of the business. Owners are interested in profitability for they indicate the growth and also the rate of return on their investments. The importance of measuring profitability has been stressed by Hingorani, Ramanathan And Grewal in these words: “*a measure of profitability is the overall measure of efficiency*”.

An appraisal of the financial position of any enterprise is incomplete unless its overall profitability is measured in relation to the sales, assets, capital employed, net worth and earnings per share. The following ratios are used to measure the profitability position from various angles:

- ⌘ Gross Profit Ratio
- ⌘ Net Profit Ratio
- ⌘ Return On Capital Employed
- ⌘ Operating Ratio
- ⌘ Operating Profit Ratio
- ⌘ Return On Owners' Equity
- ⌘ Earnings Per Share
- ⌘ Dividend Pay Out Ratio

Gross Profit Ratio:

The gross profit ratio or gross profit margin ratio expresses the relationship of gross profit on sales / net sales. B.r.rao opines that ***“gross profit margin ratio indicates the gross margin of profits on the net sales and from this margin only, all expenses are met and finally net income emerges”***.

The basic components for the computation of this ratio are gross profits and net sales. `net sales' means total sales minus sales returns

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and `gross profit' means the difference between net sales and cost of goods sold. The formula used to compute gross profit ratio is:

Gross Profit

$$\text{Gross Profit Ratio} = \frac{\text{-----}}{\text{Sales}} \times 100$$

Gross profit ratio indicates to what extent the selling prices of goods per unit may be reduced without incurring losses on operations. A low gross profit ratio will suggest decline in business which may be due to

insufficient sales, higher cost of production with the existing or reduced selling price or the all-round inefficient management. A high gross profit ratio is a sign of good and effective management.

Net Profit Ratio:

Net profit is a good indicator of the efficiency of a firm. Net profit ratio or net profit margin ratio is determined by relating net income after taxes to net sales. Net profit here is the balance of profit and loss account which is arrived at after considering all non-operating incomes such as interest on investments, dividends received, etc. And non-operating expenses like loss on sale of investments, provisions for contingent liabilities, etc. This ratio indicates net margin earned on a sale of rs.100.

The formula for calculating the ratio is:

Net

Profit

Net Profit Ratio = ----- X 100

Sales

This ratio is widely used as a measure of overall profitability and is very useful for proprietors. A higher ratio indicates better position.

Return On Capital Employed:

The prime objective of making investments in any business is to obtain satisfactory return on capital invested. Hence, the return on capital employed is used as a measure of success of a business in realising this objective. Otherwise known as return on investments, this is the overall profitability ratio. It indicates the percentage of return on capital employed

in the business and it can be used to show the efficiency of the business as

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a whole. The formula for calculating the ratio is:

Operating

Profit

$$\text{Return On Capital Employed} = \frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100$$

Capital

Employed

The term “capital employed” means [share capital + reserves and surplus + long term loans] minus [non-business assets + fictitious assets] and the term “operating profit” means profit before interest and tax. The term interest’ means interest on long-term borrowings. Non-trading income should be excluded for the above purpose. A higher ratio indicates that the funds are invested profitably.

Operating Ratio:

This ratio establishes the relationship between total operating expenses and sales. Total operating expenses includes cost of goods sold plus other operating expenses. A higher ratio indicates that operating expenses are high and the profit margin is less and therefore lower the ratio, better is the position. The operating ratio is an index of the efficiency of the conduct of business operations. An ideal norm for this ratio is between 75% to 85% in a manufacturing concern. The formula for calculating the operating ratio is thus:

$$\text{Cost Of Goods Sold} + \text{Operating Experience}$$

$$\text{Operating Ratio} = \frac{\text{Net Operating Profit}}{\text{Sales}} \times 100$$

Sales

Operating Profit Ratio: this ratio indicates net-margin earned on a sale of rs.100. It is calculated as follows:

Net Operating Profit

$$\text{Operating Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Sales}} \times 100$$

Sales

The operating profit ratio helps in determining the efficiency with which affairs of the business are being managed. An increase in the ratio over the previous period indicates improvement in the operational efficiency of the business provided the gross profit ratio is constant.

Operating profit is estimated without considering non-operating income such as profit on sale of fixed assets, interest on investments and non-

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operating expenses such as loss on sale of fixed assets. This is thus, an effective tool to measure the profitability of a business concern.

Return On Owners' Equity (Or) Shareholders' Fund (Or) The Net Worth:

The ratio of return on owners' equity is a valuable measure for judging the profitability of an organisation. This ratio helps the shareholders of a firm to know the return on investment in terms of profits. Shareholders are always interested in knowing as to what return they earned on their invested capital since they bear all the risk, participate in management and are entitled to all the profits remaining after all outside claims including preference dividend are met in full. This ratio is computed as a percentage

by using the formula:

Net Profit After Interest And Tax

Return On Owners' Equity = ----- X 100

Owners' Equity (Net Worth)

This is the single most important ratio to judge whether the firm has earned a satisfactory return for its equity-shareholders or not. A higher ratio indicates the better utilisation of owners' fund and higher productivity. A low ratio may indicate that the business is not very successful because of inefficient and ineffective management and over investment in assets.

Earnings Per Share (EPS):

The profitability of a firm from the point of view of the ordinary shareholders is analysed through the ratio 'EPS'. It measures the profit available to the equity shareholders on a per share basis, i.e. The amount that they can get on every share held. It is calculated by dividing the profits available to the shareholders by the number of the outstanding shares. The profits available to the ordinary shareholders are represented by net profit after taxes and preference dividend.

Net Profit After Tax – Preference Dividend

Earnings Per Share = -----

Number Of Equity Shares

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This ratio is an important index because it indicates whether the wealth of each shareholder on a per-share basis has changed over the period. The performance and prospects of the firm are affected by eps.

If eps increases, there is a possibility that the company may pay more dividend or issue bonus shares. In short, the market price of the share of a firm will be affected by all these factors.

Dividend Pay Out Ratio:

This ratio measures the relationship between the earnings belonging to the ordinary shareholders and the dividend paid to them. In other words, the dividend pay out ratio shows what percentage share of the net profits after taxes and preference dividend is paid out as dividend to the equity shareholders. It can be calculated by dividing the total dividend paid to the owners by the earnings available to them. The formula for computing this ratio is:

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend Per Equity Share}}{\text{Earnings Per Share}}$$

This ratio is very important from shareholder's point of view as it tells him that if a firm has used whole, or substantially the whole of its earnings for paying dividend and retained nothing for future growth and expansion purposes, then there will be very dim chances of capital appreciation in the price of shares of such firms. In other words, an investor who is more interested in capital appreciation must look for a firm having low payout ratio.

2.2.3.11 Analysis Of Operational Efficiency

The operational efficiency of an organisation is its ability to utilise the available resources to the maximum extent. Success or failure of

a business in the economic sense is judged in relation to expectations, returns on invested capital and objectives of the business concern. There are many techniques available for evaluating financial as well as operational performance of a firm. The two important techniques adopted in this study are:

1. Turnover to capital employed or return on investment (ROI)
2. Financial operations ratio

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Turnover To Capital Employed:

This is the ratio of operating revenue to capital employed. This is one of the important ratios to find out the efficiency with which the firms are utilising their capital. It signifies the number of times the total capital employed was turned into sales volumes. The term capital employed includes total assets minus current liabilities. The ratio for calculating turnover to capital employed (in percentage) is:

Operating

Revenue

Turnover To Capital Employed = ----- X 100

Capital

Employed

The higher the ratio, the better is the position.

Financial Operations Ratio:

The efficiency of the financial management of a firm is calculated through financial operations ratio. This ratio is a calculating device of the

cost and the return of financial charges. This ratio signifies a relationship between net profit after tax and operating profit. The formula for the computation of this ratio is:

$$\frac{\text{Net Profit After Tax}}{\text{Operating Profit}} \times 100$$

Here, the term “operating profit” means sales minus operating expenses. A higher ratio indicates the better financial performance of the firm.

2.2.3.12 Ratios From Shareholders’ Point Of View

1. Preference dividend cover: this ratio expresses net profit after tax as so many times of preference dividend payable. This is calculated as:

$$\frac{\text{Net Profit After Tax}}{\text{Preference Dividend}}$$

Preference Dividend

2.

Equity Dividend Cover: this ratio gives information about net profit available to equity shareholders. This ratio expresses profit as number of times of equity dividend payable. This ratio is calculated using

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the following formula:

$$\frac{\text{Net Profit After Tax} - \text{Preference Dividend}}{\text{Equity Dividend}}$$

Equity

Dividend

3. Dividend Yield On Equity Shares Or Yield Ratio: this ratio interprets dividend as a percentage of market price per share. It is calculated as:

Dividend Per Share

----- X 100

Market Price Per Share

4. Price Earning Ratio: this ratio tells how many times of earnings per

share is the market price of the share of a company. The formula to calculate

this ratio is:

Market Price Per Share

Earnings

Per

Share

2.2.3.13 Illustrations

Illustration 4: the following are the financial statements of yesye limited for the year 2005.

Balance Sheet As At 31-12-2005

Rs.

Rs.

Equity Share Capital

1,00,000

Fixed Assets 1,50,000

General Reserve

90,000

Stock

42,500

Profit & Loss Balance

7,500

debtors

19,000

Sundry Creditors

35,000

Cash

61,000

6% Debentures

30,000

Proposed

Dividends

10,000

2,72,500 2,72,500

Trading And Profit And Loss Account

For The Year Ended 31-12-2005

Rs. Rs.

To Cost Of Goods Sold

1,80,000 By Sales

3 ,00,000

To Gross Profit C/D

1,20,000

3,00,000 3,00,000

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To Expenses

1,00,000 By Gross Profit B/D 1,20,000

To Net Profit

20,000

1,20,000

1,20,000

You are required to compute the following:

1) Current Ratio

2) Acid Test Ratio

3) Gross Profit Ratio

4) Debtors' Turnover Ratio

5) Fixed Assets To Net Tangible Worth

6) Turnover To Fixed Assets

Solution:

Current Assets

1) Current Ratio

= -----

Current Liabilities

1,22,500

= ----- = 2.7:1.

45,000

Quick Assets

2) Acid Test Ratio = -----

Quick Liabilities

80,000

= ----- = 1.8:1.

45,000

Gross Profit

3) Gross Profit Ratio = ----- X 100

Sales

1,20,000

= ----- X 100 = 40%

3,00,000

Net Sales

4) Debtors' Turnover Ratio = -----

Average Debtors

128

3,00,000

= ----- = 15.78 Times.

19,000

No. Of Days In The Year

Collection Period

= -----

Debtors' Turnover

$$= \frac{\text{Net Tangible Worth}}{\text{Proprietor's Fund}} \times 100 = 76\%$$

15.78

5) Fixed Asset To

Fixed Assets

$$\text{Net Tangible Worth} = \frac{\text{Fixed Assets}}{\text{Proprietor's Fund}} \times 100$$

Proprietor's Fund

1,50,000

$$= \frac{1,17,500}{1,50,000} \times 100 = 78.33\%$$

1,97,500

Net Sales

$$6) \text{ Turnover To Fixed Assets} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

Fixed Assets

3,00,000

$$= \frac{1,50,000}{3,00,000} = 0.5 \text{ Times}$$

1,50,000

Illustration 5: from the following details prepare a statement of proprietary fund with as many details as possible.

- 1) Stock Velocity 6
- 2) Capital Turnover Ratio 2
- 3) Fixed Assets Turnover Ratio 4
- 4) Gross Profit Turnover Ratio 20%
- 5) Debtors' Velocity 2 Months
- 6) creditors' velocity 73 days

Gross profit was rs.60,000. Reserves and surplus amount to 20,000. Closing

stock was rs.5,000 in excess of opening stock.

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Solution:

1. Calculation Of Sales

Gross Profit

Gross Profit Ratio = ----- X 100 = 20%

Sales

Rs.60,000

20

= ----- = -----

Sales 100

1

= ---

5

Sales: Rs.3,00,000

2. Calculation Of Sundry Debtors

Debtors

Debtors' Velocity = ----- X 12 Months

Sales

Let Debtors Be X

X

2 = ----- X 12

3,00,000

X

----- = ---

3,00,000

X = Rs.50,000

Debtors: Rs.50,000

It Is Assumed That All Sales Are Credit Sales.

3. Calculation Of Stock

Cost Of Goods Sold

Stock Turnover Ratio = ----- = 6

= Average Stock

Cost Of Goods Sold = Sales – Gross Profit

= Rs.3,00,000 – Rs.60,000

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= Rs.2,40,000

Rs.2,40,000

----- = 6

Average Stock

Rs.2,40,000

Average Stock = ----- = Rs.40,000

6

Opening Stock + Closing Stock

Average Stock

= -----

Let Opening Stock Be Rs.X.

Then Closing Stock Will Be $X + 5,000$

$$X + X + 5,000$$

$$= 40,000$$

2

$$2X + 5,000$$

$$= 40,000$$

2

Cross Multiplying

$$2X + 5,000$$

$$= 80,000$$

2X

$$= 80,000 - 5,000$$

=

$$75,000$$

X

$$= 37,500$$

4. Calculation Of Creditors

Total Creditors

$$\text{Creditors' Velocity} = \frac{\text{Total Creditors}}{\text{Days}} \times 365$$

Days

Credit

Purchases

= 73 Days

Purchase

= Cost Of Goods + Closing Stock – Opening Stock

= Rs.2,40,000 + 42,500 – 37,500

= Rs.2,45,000

Let The Creditors Be X

X

----- X 365 = 73

2,45,000

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365 X

= 2,45,000 X 73

2,45,000 X 73

X

= -----

365

Creditors = Rs.49,000

5. Calculation Of Fixed Assets

Costs Of Goods Sold

Fixed Assets Turnover Ratio = ----- = 4

Fixed Assets

Let Fixed Assets Be X

2,40,000

$$\text{-----} = 4$$

X

$$X = 60,000$$

$$\text{Fixed Assets} = \text{Rs.}60,000$$

6. Shareholders' Fund

Cost Of Goods Sold

Capital Turnover Ratio

$$= \text{-----} = 2$$

Proprietary Fund

$$2,40,000$$

$$\text{-----} = 2$$

Proprietary Fund

$$\text{Proprietary Fund} = \text{Rs.}1,20,000$$

Shareholders' Fund Includes Share Capital, Profit & Reserve.

$$\text{Share Capital} = \text{Shareholders' Fund} - (\text{Profit} + \text{Reserve})$$

$$= \text{Rs.}1,20,000 - \text{Rs.}80,000$$

$$= \text{Rs.}40,000$$

7. Calculation Of Bank Balance

$$\text{Shareholders' Fund} + \text{Current Liabilities} = \text{Fixed Assets} + \text{Current Assets}$$

$$\text{Rs.}1,20,000 + 49,000$$

$$= \text{Rs.}60,000 + \text{Current Assets}$$

Current Assets

$$= \text{Rs.}1,09,000$$

Current Assets

= Stock + Debtors + Bank

Bank Balance

= Current Assets – (Stock +

Debtors)

= Rs.1,09,000– (42,500 + 50,000)

= Rs.1,09,000 – 92,500

= Rs.16,500

Balance Sheet As On ...

Liabilities

Rs.

Assets

Rs.

Share Capital

40,000

Fixed Assets

60,000

Reserves & Surplus 20,000

Current Assets:

Profit

60,000

Stock

42,500

Current Liabilities 49,000

Debtors

50,000

Bank 16,500

1,69,000

1,69,000

Illustration 6: The Following Data Is Furnished:

A) Working Capital Rs.45,000

B) Current Ratio 2.5

C) Liquidity Ratio 1.5

D) Proprietary Ratio – (Fixed Assets To Proprietary Funds) 0.75

E) Overdraft Rs.10,000

F) Retained Earnings Rs.30,000

There Are No Long Term Loans And Fictitious Assets.

Find Out:

1) Current Assets

2) Current Liabilities

3) Fixed Assets

4) Quick Assets

5) Quick Liabilities

6) Stock

7) Equity

Solution:

Current Assets

Current Assets

2.5

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Current Liability

1.0

Working Capital

1.5

If Working Capital Is 1.5, Current Asset Will Be 2.5.

If Working Capital Is Rs.45,000, Current Assets Will Be Rs.75,000

Current Assets = Rs.75,000

Current Liability

Current Liability = Current Assets – Working Capital

= Rs.75,000 – Rs.45,000

= Rs.30,000

Fixed Assets

Shareholders' Fund + Current Liabilities = Fixed Assets + Current Assets

Shareholders' Fund = Fixed Assets + Current Assets – Current Liabilities

= Fixed Assets + Rs.75,000 – Rs.30,000

= Fixed Assets + Rs.45,000

Let The Shareholders' Fund Be X, Fixed Assets Will Be $\frac{3}{4} X$

X

=

Rs. $\frac{3}{4} X$ + Rs.45,000

$\frac{1}{4} X$

=

Rs.45,000

X

=

Rs.1,80,000

$\frac{3}{4} X$

=

Rs.1,35,000

Fixed Assets

=

Rs.1,35,000

Shareholders Funds =

Rs.1,35,000 + Rs.45,000

=

Rs.1,80,000

Stock

Quick Assets

Liquid Ratio =

Quick Liabilities

Quick Assets

=

Current Assets – Stock

Quick Liabilities

=

Current Liabilities – Bank Overdraft

Let The Value Of Stock Be X.

Quick Assets

Rs.75,000 – X

----- =

Quick Liabilities

30,000 – 10,000

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75,000 - X

= ----- = 1.5

20,000

Cross Multiplying

75,000 – X =

20,000 X 1.5

75,000 – X =

30,000

X

=

45,000

Stock

=

Rs.45,000

Quick Assets =

Rs.75,000 – Rs.45,000

=

Rs.30,000

Quick Liabilities

=

Rs.20,000

Equity

Shareholders' Fund = Equity + Retained Earnings

Shareholders' Fund = Rs.1,80,000 (As Calculated)

Retained Earnings = Rs.30,000 (As Given)

Equity

= Rs.1,50,000

Illustration 7:

From the following balance sheet of dinesh limited calculate (i)

current ratio (ii) liquid ratio (iii) debt-equity ratio (iv) proprietary ratio,

and (v) capital gearing ratio.

Balance Sheet Of Dinesh Limited As On 31-12-2005

Liabilities

Rs.

Assets

Rs.

Equity share capital 10,00,000

goodwill

5,00,000

6% preference capital 5,00,000

plant & machinery 6,00,000

Reserves

1,00,000

land & buildings

7,00,000

Profit & loss a/c

4,00,000

furniture

1,00,000

Tax provision 1,76,000 stock 6,00,000

Bills payable

1,24,000

bills receivables

30,000

Bank overdraft

20,000

sundry debtors

1,50,000

Sundry creditors

80,000

bank account 2,00,000

12% debentures

5,00,000

short term investment 20,000

29,00,000 29,00,000

135

Current Assets

(I) Current = -----

Ratio

Current Liabilities

Stock + Bills Receivables + Debtors + Bank + S.T. Investments

= -----

S.Creditors + Bills Payable + Bank O.D. + Tax Provision

10,00,000

= ----- = 2.5 : 1.

4,00,000

Interpretation:

The current ratio in the said firm is 2.5:1 against a standard ratio of 2:1. It is a good sign of liquidity. However, the stock is found occupying 60 percent of current assets which may not be easily realisable.

Current Assets – Stocks

(II) Liquid Ratio = -----

Current Liabilities

Liquid Assets

= -----

Current Liabilities

4,00,000

= -----

4,00,000

= 1:1.

Interpretation:

The standard for quick ratio is 1:1. The calculated ratio in case of dinesh limited is also 1:1. The above two ratios show the safety in respect of liquidity in the said firm.

Long Term Debt

(III) Debt Equity Ratio = -----

Equity Shareholders' Fund

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Debentures

= -----

Equity Capital + Preference Capital + Reserves + Profit & Loss A/C

5,00,000

= -----

10,00,000 + 5,00,000 + 1,00,000 + 4,00,000

= 1:4.

Interpretation:

Debt-equity ratio indicates the firm's long term solvency. It can be observed that the firm's long term loans are constituting 25 percent to that of the owners' fund. Although such a low ratio indicates better long term solvency, the less use of debt in capital structure may not enable the firm to gain from the full stream of leverage effects.

Proprietors'

Funds

(IV) Proprietary Ratio = -----

Total Assets

20,00,000

= -----

= 20:29

29,00,000

Interpretation:

Out of total assets, seven-tenths are found financed by owners' funds. In other words a large majority of long term funds are well invested in various long term assets in the firm.

Owners' Resources

(V) Capital Gearing Ratio = -----

Fixed-Interest

Bearing

Resources

Equity Share Capital + Reserves + P&L A/C

= -----

Preference Capital + Debentures

10,00,000 + 1,00,000 + 4,00,000

= -----

5,00,000 + 5,00,000

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15,00,000

= -----

= 1.5:1.

10,00,000

Interpretation:

Keeping rs.15 lakhs of equity funds as security, the firm is found to have mobilised rs.10 lakhs from fixed interest bearing sources. It indicates that the capital structure is low geared.

Illustration 8:

The following are the balance sheet and profit and loss account of sundara products limited as on 31st december 2005.

Profit And Loss Account

To Opening Stock 1,00,000

By Sales

8,50,000	
Purchases	
5,50,000	
Closing Stock 1,50,000	
Direct Expenses	
15,000	
Gross Profit	
3,35,000	

10,00,000	
10,00,000	

To Admn. Expenses 50,000	
By Gross Profit	
3,35,000	
Office Establishment 1,50,000	
Non-Operating	
Income	
15,000	
Financial Expenses 50,000	
Non-Operating	
Expenses/Losses	

50,000

Net Profit

50,000

3,50,000

3,50,000

Balance Sheet

Liabilities

Rs.

Assets

Rs.

Equity Share Capital

Land & Buildings

1,50,000

(2000 @ 100) 2,00,000

Plant & Machinery 1,00,000

Reserves

1,50,000

Stock In Trade 1,50,000

138

Current Liabilities 1,50,000

Sundry Debtors

1,00,000

P&L A/C Balance 50,000

Cash & Bank

50,000

5,50,000

5,50,000

Calculate Turnover Ratios.

Solution:

(I) Share Capital To Turnover Ratio

Sales

= -----

Total Capital Employed

Sales

= -----

Equity + Reserve + P & L A/C Balance

8,50,000

= -----

4,00,000

= 2.13 Times.

Interpretation:

This turnover ratio indicates that the firm has actually converted

its share capital into sales for about 2.13 times. This ratio indicates the efficiency in use of capital resources and a high turnover ratio ensures good profitability on operations on an enterprise.

(ii)

fixed asset's turnover ratio

Sales

= -----

Total fixed assets

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Sales

= -----

Land + Plant & Machinery

8,50,000

= -----

2,50,000

= 3.4 times.

Interpretation:

Although fixed assets are not directly involved in the process of generating sales, these are said to back up the production process. A ratio of 3.4 times indicates the efficient utilisation of various fixed assets in this organisation.

(iii) Net working capital turnover:

Sales

= -----

Net Working Capital

Sales

= -----

Current Assets – Current Liabilities

8,50,000

= -----

3,00,000 – 1,50,000

= 5.67 Times.

Interpretation:

Net working capital indicates the excess of current assets financed by permanent sources of capital. An efficient utilisation of such funds is of prime importance to ensure sufficient profitability along with greater liquidity. A turnover ratio of 5.7 times is really appreciable.

(iv) Average Collection Period:

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Credit Sales

Debtor's Turnover = -----

Average

Debtors

Assuming that 80% of the sales of 8,50,000 as credit sales:

6,80,000

= -----

1,00,000

= 6.8 times

Average collection period

360 Days

= -----

Debtors' Turnover

360

= -----

6.8

= 53 Days

Interpretation:

Average collection period indicates the time taken by a firm in collecting its debts. The calculated ratio shows that the realisation of cash on credit sales is taking an average period of 53 days. A period of roughly two months indicate that the credit policy is liberal and needs a correction.

(v)

Stock Turnover Ratio

Cost Of Goods Sold

= -----

Average Stock

Sales – Gross Profit

= -----

(Opening Stock + Closing Stock) + 2

5,15,000

= -----

1,25,000

= 4.12 times.

Interpretation:

Stock velocity indicates the firm's efficiency and profitability.

The stock turnover ratio shows that on an average inventory balances are cleared once in 3 months. Since there is no standard for this ratio, the period of operating cycle of this firm is to be compared with the industry average for better interpretation.

Illustration 9:

Comment on the performance of Arasu Limited from the ratios given below:

Industry

average

Ratios

of

Ratios

Arasu

ltd.

1. Current ratio

2:1

2.5:1

2. Debt-equity ratio

2:1

1:1

3. Stock turnover ratio

9.5

3.5

4. Net profit margin ratio 23.5%

15.1%

Solution:

(i) Current Ratio:

This ratio indicates the liquidity position of a firm. The ability of a firm in meeting its current liabilities could be understood by this ratio. The calculated results show that the liquidity in Arasu Limited is even greater than industry average, showing the safety. However, excess liquidity locks up the capital in unnecessary current assets.

(ii) Debt-Equity Ratio:

It is an indicator of a firm's solvency in terms of its ability to repay long term loans in time. The calculated ratio shows better solvency of 1:1 indicating that for every one rupee of debt capital, to repay one rupee of equity base exists in Arasu Ltd. However, this ratio is not likely to ensure the leverage benefits that a firm gains by using higher dose of debt.

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(iii) Stock Turnover Ratio:

Stock velocity is an indicator of a firm's activeness. It directly influences the profitability of a firm. The calculated ratio for Arasu Ltd. is very poor when compared to industry average. This poor ratio indicates the inefficient use of capacities, consequently, the likely low profitability.

(iv) Net Profit Margin Ratio:

Although the firms in a particular industry could sell the product more or less at same price, the net profits differ among firms due to their cost of production, excessive administrative and establishment expenses etc. This picture is found true in case of arasu ltd. A poor profitability of 15.1% compared to an industry average of 23.5% may be due to low stock turnover, inefficiency in management, excess overhead cost and excessive interest burdens.

2.2.3.14 Summary

Financial statements by themselves do not give the required information both for internal management and for outsiders. They must be analysed and interpreted to get meaningful information about the various aspects of the concern. Analysing financial statements is a process of evaluating the relationship between the component parts of the financial statements to obtain a proper understanding of a firm's performance.

Financial analysis may be external or internal analysis or horizontal or vertical analysis. Financial analysis can be carried out through a number of tools like ratio analysis, funds flow analysis, cash flow analysis etc.

Among the various tools available for their analysis, ratio analysis is the most popularly used tool. The main purpose of ratio analysis is to measure past performance and project future trends. It is also used for inter-firm and intra-firm comparison as a measure of comparative productivity. The financial analyst x-rays the financial conditions of a concern by the use of various ratios and if the conditions are not found to be favourable, suitable

steps can be taken to overcome the limitations.

2.2.3.15 Key Words

Analysis: analysis means methodical classification of the data given

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in the financial statements.

Interpretation: interpretation means explaining the meaning and significance of the data so classified.

Financial Statements: income statement and balance sheet.

Ratio: the relationship of one item to another expressed in simple mathematical form is known as a ratio.

Ratio Analysis: the process of computing, determining and presenting the relationship of items and groups of items in financial statements.

Financial Leverage: the ability of a firm to use fixed financial charges to magnify the effects of changes in ebit on the firm's earnings per share.

Net Worth: proprietors' funds – intangible assets – fictitious assets.

Debt: both long term and short term liabilities.

Operating Profit: gross profit – operating expenses.

Equity: proprietors' fund.

Capital Employed: net worth + long term liabilities.

2.2.3.16 Self Assessment Questions

1. Explain the meaning of the term 'financial statements'. State their nature and limitations.
2. Explain the different types of financial analysis.
3. Explain the various tools of financial analysis.

4. Justify the need for analysis and interpretation of financial statements.
5. Collect the annual reports of any public limited company for a period of 5 years. Calculate the trend percentages and prepare a report.
6. What is meant by ratio analysis? Explain its significance in the analysis and interpretation of financial statements.
7. Explain the importance of ratio analysis in making comparisons between firms.
8. How are the ratios broadly classified? Explain how ratios are calculated under each classification.
9. What are the limitations of ratio analysis?

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10. From the below given summary balance sheet, calculate current ratio and long term solvency ratio.

Balance Sheet As On 31st December 2005

Liabilities

Rs.

Assets

Rs.

Share Capital

4,00,000

Fixed Assets 4,00,000

Long Term Loans

2,00,000

Current Assets

4,00,000

Current Liabilities

2,00,000

8,00,000

8,00,000

11. From the following trading and profit and loss account and balance sheet calculate (i) stock turnover ratio (ii) debtors' velocity (iii) sales to working capital (iv) sales to total capital employed (v) return on investment (vi) current ratio (vii) net profit ratio and (viii) operating ratios.

Trading And Profit And Loss Account

Rs.

Rs.

To Opening Stock

1,00,000

By Sales

10,00,000

To Purchase

5,50,000

By Closing Stock 1,50,000

To Gross Profit

5,00,000

11,50,000 11,50,000

By Gross Profit 5,00,000

Admn. Expenses

1,50,000

Interest

30,000

Selling Expenses

1,20,000

Net Profit

2,00,000

5,00,000 5,00,000

Balance Sheet

Share capital

10,00,000

Land & Building

5,00,000

Profit & loss a/c

2,00,000

Plant & Machinery 3,00,000

S.creditors

2,50,000

Stock

1,50,000

Bills payable

1,50,000

Debtors'

1,50,000

Bills receivable 1,25,000

Cash in hand 1,75,000

Furniture

2,00,000

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16,00,000 16,00,000

12. Triveni engineering limited has the following capital structure:

9% preference shares of rs.100 each

10,00,000

Equity shares of rs.10 each

40,00,000

50,00,000

The following information relates to the financial year just ended:

Profit after taxation

22,00,000

Equity dividend paid

20%

Market price of equity shares rs.20 each

You are required to find

(A) Dividend Yield On Equity Shares

(B) The Cover For Preference And Equity Dividend

(C) Earnings Per Share

(D) P/E Ratio

2.2.3.17 Key To Self Assessment Questions (For Problems Only)

Q.no.10:

current ratio: 2:1; debt equity ratio: 1:2 or 1:1.

Q.no.11:

(i) 4 times; (ii) 100 days; (iii) 5 times; (iv) 0.83 times; (v)

19.17%; (vi) 1.5:1; (vii) 20%; (viii) 77%.

Q.no.12:

(a) 10%; (b) 24.4 times and 2.6 times (c) rs.5.275; (d) 3.8

times.

2.2.3.18 Case Analysis

The following figures are extracted from the balance sheets of a

Company:

2002-03 2003-04

2004-05

Rs. Rs. Rs.

Assets

Buildings

12,000

10,000

20,000

Plant And Equipment

10,000

15,000

10,000

Stock

50,000

50,000

70,000

146

Debtors

30,000

50,000

60,000

1,02,000 1,25,000 1,60,000

Liabilities

Paid up capital (rs.10 shares –

56,000

56,000

56,000

Rs.7-50 paid up)

Profit & loss a/c

10,000

13,000

15,000

Trade creditors

11,000

26,000

39,000

Bank

25,000

30,000

50,000

1,02,000 1,25,000 1,60,000

Sales

1,00,000 1,50,000 1,50,000

Gross profit

25,000

30,000

25,000

Net profit

5,000 7,000 5,000

Dividend paid

4,000 4,000

3,000

The opening stock at the beginning of the year 2002-03 was rs.4,000.

As a financial analyst comment on the comparative short-term, activity, solvency, profitability and financial position of the company during the three year period.

Solution:

To test the short-term solvency the following ratios are calculated for three years:

- I. Current ratio and
- li. Quick ratio

(i) Current Ratio:

2002-03 2003-04

2004-05

Current assets

80,000 1,00,000

1,30,000

Current liabilities

36,000

56,000

89,000

2.22:1

1.80:1

1.46:1

(ii) Quick Ratio:

2002-03 2003-04

2004-05

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Quick assets (debtors)

30,000

50,000

60,000

Quick liabilities (creditors)

11,000

26,000

39,000

2.7:1

1.9:1

1.5:1

As the standard for current ratio is 2:1 the working capital position of the company has weakened in the 2nd year and 3rd year. However the quick ratio for all the three years is well above the standard of 1:1. Thus it can be said that the short term solvency position of the company shows a mixed trend.

Activity Ratios:

To test the operational efficiency of the company the following ratios are calculated. Debtors turnover ratio and inventory turnover ratio.

Debtors Turnover Ratio:

2002-03 2003-04

2004-05

Sales

1,00,000 1,50,000

1,50,000

Average Debtors

30,000

40,000

55,000

3.33 Times 3.75 Times 2.73 Times

The sales as a number of times of debtors has improved in the year 2003-04 but has deteriorated in the year 2004-05.

Inventory Turnover Ratio:

2002-03 2003-04 2004-05

Cost Of Goods Sold (Sales – G.P.) 75,000 1,20,000

1,25,000

O.S + C.S

27,000

50,000

60,000

Average Stock (-----)

2 2.78 Times 2.40 Times 2.08 Times

Though there is no standard for inventory turnover ratio, higher the ratio, better is the activity level of the concern. From this angle the ratio has come down gradually during the three year period indicating slow moving of stock.

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Profitability Ratio s:

To analyse the profitability position of the company, gross profit ratio and net profit ratio are calculated.

Gross Profit Ratio:

2002-03 2003-04 2004-05

Gross Profit

25,000 30,000 25,000

----- X 100

Sales

1,00,000 1,50,000 1,50,000

25%

20% 16.7%

Net Profit Ratio:

2002-03 2003-04 2004-05

Net Profit

5,000

7,000

5,000

----- X 100

Sales

1,00,000 1,50,000

1,50,000

5%

4.7%

3.3%

The profitability ratios show that there is steady decline in the profitability of the concern during the period. One reason for this declining profitability among others, is the low and decreasing inventory turnover ratio.

Financial Position: here the long term solvency position of the concern is analysed by calculating debt/equity ratio and debt/asset ratio.

Debt/Equity Ratio:

2002-03 2003-04 2004-05

Debt

36,000

56,000



89,000

Equity

66,000

69,000

71,000

0.545:1

0.812:1

1.254:1

Debt/Asset Ratio:

2002-03 2003-04

2004-05

Debt

36,000

56,000

89,000

Assets

1,02,000 1,25,000

1,61,000

0.35:1 0.448:1

0.556:1

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Debt equity ratio expresses the existence of debt for every re.1 of equity. From this standpoint the share of debt in comparison to equity is increasing year after year and in the last year the debt is even more than equity. Debt asset ratio gives how much of assets have been acquired using debt funds. The calculation of this ratio reveals that in the 1st year 35% of assets were purchased using debt funds which has increased to 44.8% in the 2nd year and 55.6% in the 3rd year. Thus both the ratios reveal that the debt component in the capital structure is increasing which has far reaching consequences.

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CHAPTER-III

Lesson 3.1: Funds Flow Analysis And Cash Flow Analysis

3.1.1 Introduction

At the end of each accounting period, preparation and presentation of financial statements are undertaken with an objective of providing as much information as possible for the public. The balance sheet presents a snapshot picture of the financial position at a given point of time and the income statement shows a summary of revenues and expenses during the accounting period. Though these are significant statements especially in terms of the principal goals of the enterprise, yet there is a need for one more statement which will indicate the changes and movement of funds between two balance sheet dates which are not clearly mirrored in the balance sheet and income statement. That statement is called as funds flow statement. The analysis which studies the flow and movement of funds is called as funds flow analysis. Similarly one more statement has to be prepared known as cash flow statement. This requires the doing of cash flow analysis. The focus of cash flow analysis is to study the movement and flow of cash during the accounting period. This lesson deals at length both the analyses.

3.1.2

Understand the concept of funds and flow.

Evaluate the changes in working capital in an organization.

Ascertain the sources and uses of funds from a given financial statement.

Prepare fund flow statement.

Understand the concepts of cash and cash flow.

Understand the cash flow analysis.

Prepare cash flow statement.

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3.1.3 Contents of concepts:

3.3.3.1 Concept Of Funds

3.3.3.2. Flow Of Funds

3.3.3.3 Importance And Utility Of Funds Flow Analysis

3.3.3.4 Preparation Of Funds Flow Statement

3.3.3.5 Illustrations

3.3.3.6 Meaning Of Concepts Of Cash, Cash Flow And Cash Flow

Analysis

3.3.3.7 Cash Flow Statement

3.3.3.8 Calculation Of Cash From Operations

3.3.3.9 Utility Of Cash Flow Analysis

3.3.3.10 Cash Flow Analysis Vs. Funds Flow Analysis

3.3.3.11 Illustrations

3.3.3.12 Summary

3.3.3.13 Key Words

3.3.3.14 Self Assessment Questions

3.3.3.15 Key To Self Assessment Questions

3.3.3.16 Case Analysis

3.3.3.17 Books For Further Reading

3.1.3.1 Concept Of Funds

How are funds defined? Perhaps the most ambiguous aspect of funds flow statement is understanding what is meant by funds. Unfortunately there is no general agreement as to precisely how funds should be defined. To a lay man the concept of funds means 'cash'. According to a few, 'funds' means 'net current monetary assets' arrived at by considering current assets (cash + marketable securities + short term receivables) minus short term obligations. A third view, which is the most acceptable one, is that concept of funds means 'working capital' and in this lesson the term 'funds' is used in the sense of Working capital.

Working Capital Concept Of Funds

The excess of an enterprise's total current assets over its total current liabilities at some point of time may be termed as its net current assets or working capital. To illustrate this, let us assume that on the balance sheet date the total current assets of an enterprise are rs.3,00,000 and its total
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current liabilities are rs.2,00,000. Its working capital on that date will be $rs.3,00,000 - rs.2,00,000 = rs.1,00,000$. It follows from the above, that any increase in total current assets or any decrease in total current liabilities will result in a change in working capital.

3.1.3.2 Flow Of Funds

The term 'flow' means change and therefore, the term 'flow of funds' means 'change in funds' or 'change in working capital'. According

to manmohan and goyal, “the flow of funds” refers to movement of funds described in terms of the flow in and out of the working capital area. In short, any increase or decrease in working capital means ‘flow of funds’. Many transactions which take place in a business enterprise may increase its working capital, may decrease it or may not effect any change in it. Let us consider the following examples.

(i) Purchased Machinery For Rs.3,00,000:

The effect of this transaction is that working capital decreases by 3,00,000 as cash balance is reduced. This change (decrease) in working capital is called as application of funds. Here the accounts involved are current assets (cash a/c) and fixed asset (machinery a/c).

(ii) Issue Of Share Capital Of Rs.10,00,000:

This transaction will increase the working capital as cash balance increases. This change (increase) in working capital is called as source of funds. Here the two accounts involved are current assets (cash a/c) and long-term liability (share capital a/c).

(iii) Sold Plant For Rs.3,00,000:

This transaction will have the effect of increasing the working capital by rs.3,00,000 as the cash balance increases by rs.3,00,000. It is a source of funds. Here the accounts involved are current assets (cash a/c) and fixed assets (plant a/c).

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(iv) Redeemed Debentures Worth Rs.1,00,000:

This transaction has the effect of reducing the working capital, as

the redemption of debentures results in reduction in cash balance. Hence this is an example of application of funds. The two accounts affected by this transaction are current assets (cash a/c) and long-term liability (debenture a/c).

(v) Purchased Inventory Worth Rs.10,000:

This transaction results in decrease in cash by rs.10,000 and increase in stock by rs.10,000 thereby keeping the total current assets at the same figure. Hence there will be no change in the working capital (there is no flow of funds in this transaction). Both the accounts affected are current assets.

(vi) Notes Payable Drawn By Creditors Accepted For Rs.30,000:

The effect of this transaction on working capital is nil as it results in increase in notes payable (a current liability) and decreases the creditors (another current liability). Since there is no change in total current liabilities there is no flow of funds.

(vii) Building Purchased For Rs.30,00,000 And Payment Is Made By Shares:

This transaction will not have any impact on working capital as it does not result in any change either in the current asset or in the current liability. Hence there is no flow of funds. The two accounts affected are fixed assets (building a/c) and long term liabilities (capital a/c).

From the above series of examples, we arrive at the following rules on flow of funds:

1. There Will Be Flow Of Funds Only When There Is A Cross-Transaction

I.E., Only When The Transaction Involves:

⌘ Current Assets And Fixed Assets E.G., Purchase Of Machinery
For Cash (Application Of Funds) Or Sale Of Plant For A Cash
(Source Of Funds).

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⌘ Current Assets And Capital, E.G., Issue Of Shares (Source Of
Funds).

⌘ Current Assets And Long Term Liabilities, E.G., Redemption Of
Debentures In Cash (Application Of Funds).

⌘ Current Liabilities And Long-Term Liabilities, E.G., Creditors
Paid Off In Debentures Or Shares (Source Of Funds).

⌘ Current Liabilities And Fixed Assets, E.G., Building Transferred
To Creditors In Satisfaction Of Their Claims (Source Of Funds).

Ii. There Will Be No Flow Of Funds When There Is No Cross Transaction

I.E., When The Transaction Involves:

⌘ Current Assets And Current Assets, E.G., Inventory Purchased
For Cash.

⌘ Current Liabilities And Current Liabilities, E.G., Notes Payable
Issued To Creditors.

⌘ Current Assets And Current Liabilities, E.G., Payments Made To
Creditors.

⌘ Fixed Assets And Long Term Liabilities, E.G., Building Purchased
And Payment Made In Shares Or Debentures.

(a) Sources And Application Of Funds: the following are the main sources

of funds:

(i) Funds From Operations: the operations of the business generate revenue and entail expenses. Revenues augment working capital and expenses other than depreciation and other amortizations. The following adjustments will be required in the figures of net profit for finding out the real funds from operations:

Funds From Operations

Net profit for the year

X

X

X

Add*: depreciation of fixed assets

X

X

X

Preliminary expenses, goodwill, etc.

Written

off

X

X

X

Loss on sale of fixed assets

X

X

x

Transfers to reserve

x

x

x

Less: profit on sale or revaluation

x

x

x

Dividends received, etc.

X

x

x

Funds from operations

x

x

x

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* these items are added as they do not result in outflow of funds. In case of

'net loss' for the year these items will be deducted.

(ii) Issue Of Share Capital 1: an issue of share capital results in an

inflow of funds.

(iii) Long-Term Borrowings: when a long-term loan is taken, there

is an increase in working capital because of cash inflow. A short term loan,

however, does not increase the working capital because a short-term loan increases the current assets (cash) and the current liability (short term loan) by the same amount, leaving the size of working capital unchanged.

(iv) Sale Of Non-Current Assets: when a fixed asset or a long-term investment or any other non-current asset is sold, there will be inflow represented by cash or short-term receivables.

(b) Uses Of Funds: the following are the main uses of funds:

(i) Payment Of Dividend: the transaction results in decrease in working capital owing to outflow of cash.

(ii) Repayment Of Long-Term Liability:

The repayment of long-term loan involves cash outflow and hence it is used for working capital. The repayment of a current liability does not affect the amount of working capital because it entails an equal reduction in current liabilities and current assets.

(iii) Purchase Of Non-Current Assets:

when a firm purchases fixed assets or other non-current assets, and if it pays cash or incurs a short-term debt, its working capital decreases. Hence it is a use of funds.

3.1.3.3 Importance And Utility Of Funds Flow Analysis

Funds flow analysis provides an insight into the movement of funds and helps in understanding the change in the structure of assets, liabilities and owners' equity. This analysis helps financial managers to find answers to questions like:

(i) how far capital investment has been supported by long term

financing?

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(ii) how far short-term sources of financing have been used to support capital investment?

(iii) how much funds have been generated from the operations of a business?

(iv) to what extent the enterprise has relied on external sources of financing?

(v) what major commitments of funds have been made during the year?

(vi) where did profits go?

(vii) why were dividends not larger?

(viii) how was it possible to distribute dividends in excess of current earnings or in the presence of a net loss during the current period?

(ix) why are the current assets down although the income is up?

(x) has the liquidity position of the firm improved?

(xi) what accounted for an increase in net current assets despite a net loss for the period?

(xii) how was the increase in working capital financed?

3.1.3.4 Preparation Of Funds Flow Statement

Two statements are involved in funds flow analysis.

(I) Statement Or Schedule Of Changes In Working Capital

(II) Statement Of Funds Flow

(a) Statement Of Changes In Working Capital:

This statement when prepared shows whether the working capital has increased or decreased during two balance sheet dates. But this does not give the reasons for increase or decrease in working capital. This statement is prepared by comparing the current assets and the current liabilities of two periods. It may be shown in the following form:

Schedule Of Changes In Working Capital (Proforma)

Items

As on As on Change

Current Assets Increase Decrease

Cash Balances

Bank Balances

Marketable Securities

Stock In Trade

Pre-Paid Expenses

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Current Liabilities

Bank Overdraft

Outstanding Expenses

Accounts Payable

Provision For Tax

Dividend

Increase / Decrease In

Working Capital

Any increase in current assets will result in increase in working

capital and any decrease in current assets will result in decrease in working capital. Any increase in current liability will result in decrease in working capital and any decrease in current liability will result in increase in working capital.

(b) Funds Flow Statement:

Funds flow statement is also called as statement of changes in financial position or statement of sources and applications of funds or where got, where gone statement. The purpose of the funds flow statement is to provide information about the enterprise's investing and financing activities. The activities that the funds flow statement describes can be classified into two categories:

- (i) activities that generate funds, called sources, and
- (ii) activities that involve spending of funds, called uses.

When the funds generated are more than funds used, we get an increase in working capital and when funds generated are lesser than the funds used, we get decrease in working capital. The increase or decrease in working capital disclosed by the schedule of changes in working capital should tally with the increase or decrease disclosed by the funds flow statement.

The funds flow statement may be prepared either in the form of a statement or in 't' shape form. When prepared in the form of statement it would appear as follows:

Funds Flow Statement

Sources Of Funds

Issues

of

shares

x x x

Issue

of

debentures

x x x

Long term borrowings

x

x

x

Sale of fixed assets

x

x

x

*operating profit

(funds from operations)

x

x

x

Total

sources

X

X

X

Application Of Funds

Redemption of redeemable

Preference

shares

X X

X

Redemption of debentures

X

X

X

Payments for other long-term loans

X

X

X

Purchase of fixed assets

X

X

X

* operation loss (funds lost from

X

X

x

Operations)

Total uses

x

x

x

Net increase / decrease in working capital

(total sources – total uses)

When prepared in 't' shape form, the funds flow statement would

Appear as follows:

Funds Flow Statement

Sources Of Funds

Application Of Funds

* Funds From Operation x x x *Funds Lost In Operations xx x

Issue Of Shares

x x x Redemption Of

Preference Shares x x x

Issue Of Debentures x x x Redemption Of Debentures x x x

Long-Term Borrowings x x x Payment Of Other Long-Term

Loans

x x x

Sale Of Fixed Assets x x x Purchase Of Fixed Assets x x x

* Decrease In Working

Payment Of Dividend, Tax,

Capital

x x x Etc.

x x x

Increase In Working Capital

x x x

*Only One Figure Will Be There.

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It may be seen from the proforma that in the funds flow statement preparation, current assets and current liabilities are ignored. Attention is given only to change in fixed assets and fixed liabilities.

In this connection an important point about **provision for taxation and proposed dividend** is worth mentioning. These two may either be treated as current liability or long-term liability. When treated as current liabilities they will be taken to schedule of changes in working capital' and thereafter no adjustment is required anywhere. If they are treated as long-term liabilities there is no place for them in the schedule of changes in working capital. The amount of tax provided and dividend proposed during the current year will be added to net profits to find the funds from operations. The amount of actual tax and dividend paid will be shown as application of funds in the funds flow statement. In this lesson, we have taken them as **current liabilities**.

3.1.3.5 Illustrations

Illustration 1: the mechanism of preparation of funds flow statement is proposed to be explained with the help of annual reports for the years 2010-11 and 2011-12 pertaining to arasu limited.

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Arasu limited

Balance sheet as at 31st march

Rs.2000

2011-12

2010-11

Source of

funds

1. Share capital

1,40,00

1,40,00

2. Reserves and

surplus

2,77,84

2,30,62

4,17,84

3,70,62

Ii. Application

of funds

1. Fixed assets

4,83,15

4,61,23

Less: dep.

Provision

2. Investments

2,57,85 2,25,30 2,27,36 2,33,87

20,25 20,30

3. Current Assets, Loans

And Advances

Inventories 1,52,83 1,92,54

Debtors 51,41 64,29

Cash And Bank 1,40,80 18,46

Loans & Advances 17,82 14,73

3,62,86 2,90,02

Less: Current Liabilities

& Provisions

Liabilities 89,81 76,70

Provisions 100,76 96,87

1,90,57 1,73,57

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Net Current Assets 1,72,29 1,16,45

(Working Capital) 4,17,84 3,70,62

Profit And Loss Account

For The Year Ended 31St March

Rs.`000

2011-12 2010-11

Income

Sales 4,94,19 5,36,63

Other Income 2,35,73 2,57,64

7,29,92 7,94,27

Expenditure

Opening Stock 20,45 25,59

Raw Materials Consumed	87,35	95,67
Packing Materials Consumed	2,87,78	3,29,04
Excise Duty	23,90	27,26
Expenses	1,65,38	1,29,94
Directors' Fees	11	10
Interest	94	5,69
Depreciation	30,49	39,98

	6,16,40	6,53,27
Less: Closing Stock	19,06	20,45

	5,97,34	6,32,82

Profit Before Taxation	1,32,58	1,61,45
Provision For Income-Tax	(64,36)	(82,40)

	68,22	79,05
Profit Brought Forward From		
	162	
Previous year	12	1

Balance	68,34	79,06
	183	
Provision for taxation		

Relating to earlier year ----- (46,27)

Miscellaneous expenditure

Written off ----- (15,67)

Balance available for

Appropriation 68,34 17,12

Appropriations

General reserve 47,25 3,00

Proposed reserve for appropriation 21,00 14,00

68,25 17,00

Balance carried over to next year 9 12

For the above financial statements, funds flow statement is prepared as

Follows with necessary workings:

I. Calculation Of Funds From Operations For The Year 2011-12

(Rs.`000)

Balance of profit carried over to next year

9

Add: provision for depreciation

30,49

Transfer to general reserves

47,25

77,83

Less: balance of profit brought forward from previous year 12

Funds from operations

77,71

Note: provision for income-tax and proposed dividend are taken as current liabilities. Hence they are not added here. They will be taken to schedule of Changes in working capital.

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Ii. Fixed Assets: from a perusal of schedule relating to fixed assets' in the annual report, it is ascertained that there was a sale of fixed assets amounting to rs.16,62,000 and purchase of fixed assets to the tune of rs.38,54,000.

These will be shown as source and application of funds respectively. (in examination problems information about, sale and purchase of assets can be ascertained by preparing respective asset accounts).

Iii. Investments:

A similar perusal of schedule relating to investments' gives information that there was a redemption of investment amounting to rs.5,000 which is a source of fund.

Now the schedule of changes in working capital and funds flow

Statement are prepared.

Arasu Limited

Schedule Of Changes In Working Capital 2011-12

(Rs.`000)

2010-11

2011-12

Increase

Decrease

Current Assets

Inventories 1,92,54

1,52,83

39,71

Debtors

64,29

51,41

12,88

Cash and

Bank

18,46

1,40,80

1,22,34

Loans and

Advances

14,73

17,82

3,09

(A) Total Of

Current Assets

2,90,02

3,62,86

Current Liabilities

Creditors

75,43

88,81

13,38

Unpaid

Dividend

1,27

1,00

27

Provision for

Tax

82,87

79,76

3,11

Proposed

Dividend

14,00 21,00 --- 7,00

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(b) Total Of Current 1,73,57

1,90,57

liabilities

Working

Capital (a)-(b) 1,16,45

1,72,29

Increase in working

Capital

55,84

55,84

1,72,29

1,72,29

1,28,81

1,28,81

Arasu Limited

Funds Flow Statement 2011-12

Sources

Applications

Rs.

Rs.

Funds from operations

77,71

purchase of fixed assets 38,54

Sale of fixed assets 16,62

increase in working

capital 55,84

Redemption of investment 5

94,38 94,38

It may be seen from the above statement that sources amount to rs.94,38,000 and applications amount to rs.38,54,000, thereby resulting in an increase in working capital amounting to rs.55,84,000. This figure tallies with the increase in working capital as shown by the schedule of changes in working capital.

Illustration 2:

The balance sheet of mathi limited for two years was as follows:

Liabilities

Assets

2010

2011

2010

2011

Share Capital 40,000

60,000 Land & 27,700

56,600

Buildings

Share Premium 4,000 6,000 Plant & 17,800

25,650

Machinery

165

General Reserve

3,000 4,500 Furniture 1,200 750

Profit & Loss A/C 9,750 10,400 Stock 11,050 13,000

5% Debentures

--- 13,000 Debtors 18,250 19,550

Creditors

16,750 18,200 Bank 2,400 2,000

Provision For

4,900 5,450

Taxation

78,400 1,17,550

78,400 1,17,550

Additional Information

Depreciation written off during the year was:

Plant and machinery

rs.6,400

Furniture

rs. 200

Prepare: a schedule of changes in working capital and a statement of sources and application of funds.

Schedule Of Changes In Working Capital

Working

Capital

2010

2011 Increase Decrease

Rs.

Rs.

Rs. Rs.

Current Assets

Stock

11,050

13,000

1,950

Debtors

18,250

19,550

1,300

Bank

2,400 2,000

400

(a)

31,700

34,550

Current Liabilities

Creditors

16,750

18,200

1,450

Provision for

Taxation

4,900 5,450

550

(b)

21,650

23,650

Working capital

(a) – (b)

10,050

10,900

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Increase in working

Capital

850

850

10,900 10,900 3,250

3,250

Calculation Of Funds From Operations

Profit And Loss A/C As On 31-12-2011

10,400

Add: Transfer To Reserve

1,500

Depreciation –

Plant & Machinery

6,400

Furniture

200

18,500

Less: P&L A/C As On 1-1-2011

9,750

Funds From Operations

8,750

Land & Building A/C

To Balance B/D

27,700

By Balance C/D

56,600

To Bank Purchase

28,900

(Balancing Figure)

56,600

56,600

Plant & Machinery A/C

To Balance B/D

17,800

By Depreciation 6,400

To Bank Purchase

14,250

By Balance C/D

25,650

(Balancing Figure)

32,050

32,050

Furniture A/C

To Balance B/D

1,200

By Depreciation 200

By Bank – Sale

250

(Balancing Figure)

By Balance C/D

750

1,200

1,200

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Statement of Sources And Application of Funds

Sources

Rs.

Applications

Rs.

Funds From Operations

8,750	
Purchase Of Land & 28,900	
Share Capital 20,000	
Buildings	
Share Premium	
2,000	
Purchase Of Plant & 14,250	
Debentures	
13,000	
Increase In Working 850	
Sale Of Furniture	
250	
Capital	

44,000	
44,000	

3.1.3.6 Meaning of Concepts of Cash, Cash Flow And Cash Flow

Analysis

While explaining the concept of 'fund' it was mentioned that in a narrower sense the term 'fund' is also used to denote cash. The term 'cash'

in the context of cash flow analysis stands for cash and bank balances. Cash flow refers to the actual movement of cash in and out of an organisation. When cash flows into the organisation it is called cash inflow or positive cash flow. In the same way when cash flows out of the organisation, it is called cash outflow or negative cash flows. Cash flow analysis is an analysis based on the movement of cash and bank balances. Under cash flow analysis, all movements of cash would be considered.

3.1.3.7 Cash Flow Statement

A cash flow statement is a statement depicting changes in cash position from one period to another i.e. The result of cash flow analysis is given in the cash flow statement. For example if the cash balance of a concern as per its balance sheet as on 31st march 2004 is rs.90,000 and the cash balance as per its balance sheet as on 31st march 2005 is rs.1,20,000, there has been an inflow of cash of rs.30,000 in the year 2004-05 as compared to the year 2003-04. The cash flow statement explains the reasons for such inflows or outflows of cash as the case may be.

Normally the following are principal sources of inflows of cash:

- ⌘ Issue Of Shares And Debentures For Cash
- ⌘ Sale Of Fixed Assets And Investments For Cash
- ⌘ Borrowings From Banks And Other Financial Institution

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- ⌘ Cash From Operations

Outflows of cash generally include:

- ⌘ Redemption Of Shares And Debentures By Cash

₹ Purchase Of Fixed Assets And Investments By Cash

₹ Repayment Of Loans

₹ Cash Lost In Operations

The following is the format of a cash flow statement:

Cash Flow Statement For The Year Ending Say 31st March 2012

Balance as on 1-4-2011

balance as on 1-4-2011

Cash in hand

x x x

bank overdraft (if any) xx x

Cash at bank

x x x

Add: cash inflows:

cash outflows:

Here the items mentioned

here the items mentioned

As sources of cash inflows

as outflows of cash above

Above will be recorded

will be recorded

Balance as on 31-3-2012

balance as on 31-3-2012

Bank overdraft (if any)

x x x

cash in hand

xx x

Cash at bank

x x x

x

x

x

x

x

x

The accounting standard 3 issued by the institute of chartered accountants of india requires the companies to prepare cash flow statement and present them as part of their annual reports.

3.1.3.8 Calculation of Cash From Operations

The important step in the preparation of cash flow statement is the calculation of cash from operations. It is calculated as follows:

The first step in the calculation of cash from operations is the calculation of funds from operations (which is already explained in the lesson on funds flow analysis). To the funds from operations the decrease in current assets

and increase in current liabilities will be added (except cash, bank and bank o.d.). From the added total, increase in current assets and decrease in current liabilities will be deducted (except cash, bank and bank o.d.). The resultant figure is cash from operations (refer illustration 3).

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Proforma Of Cash From Operations Statement

Funds from operations or funds lost from operations

X X X X

Add: Decrease in current assets

X X X X

Increase in current liabilities

X X X X

X

X

X

X

Less: Increase in current assets

X X X

Decrease in current liabilities

X X X

X

X

x

x

Cash from operations or cash lost from operations

As in the case of fund flow analysis here also we assume **provision for taxation** and proposed dividend as current liabilities.

3.1.3.9 Utility of Cash Flow Analysis

Cash flow analysis yields the following advantages:

⌘ It is very helpful in understanding the cash position of the firm.

This would enable the management to plan and coordinate the financial operations properly.

⌘ Since it provides information about cash which would be available from operations the management would be in a position to plan repayment of loans, replacement of assets, etc.

⌘ It throws light on the factors contributing to the reduction of cash balance inspite of increase in income and vice versa.

⌘ A comparison of the cash flow statement with the cash budget for the same period helps in comparing and controlling cash inflows and cash outflows.

However cash flow analysis is not without limitations. The cash balance as disclosed by the cash flow statement may not represent the real liquid position of the business since it can be easily influenced by postponing purchases and other payments. Further cash flow statement cannot replace the income statement or funds flow statement. Each of them has a separate function to perform.

3.1.3.10 Cash Flow Analysis Vs. Funds Flow Analysis

⌘ A cash flow statement is concerned only with the changes in cash position while funds flow analysis is concerned with changes in working capital position between two balance sheet dates.

⌘ Cash flow analysis is a tool of short-term financial analysis while the funds flow analysis is comparatively a long-term one.

⌘ Cash is part of working capital and therefore an improvement in cash position results in improvement in the funds position but not vice versa. In other words “inflow of cash” results in “inflow of funds” but inflow of funds may not necessarily result in “inflow of cash”.

⌘ In funds flow analysis, the changes in various current assets and current liabilities are shown in a separate statement called schedule of changes in working capital in order to ascertain the net increase or decrease in working capital. But in cash flow analysis, such changes are adjusted to funds from operations in order to ascertain cash from operations.

3.1.3.11 illustrations

Illustration 3:

From the following balances calculate cash from operations:

December

31

2010

2011

Profit and loss a/c balance

75,000 1,55,000

Debtors

45,000

42,000

Creditors

20,000

26,000

Bills receivable

12,000

15,000

Cash in hand

2,500 3,000

Prepaid expenses

1,600 1,400

Bills payable

18,000

16,000

Cash at bank

8,000 10,000

Outstanding expenses

1,200

1,600

Income received in advance

250

300

Outstanding income

800

900

Additional Information:

(i)

depreciation written off during the year rs.10,000

(ii)

transfer to general reserve

rs.10,000

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Calculation Of Funds From Operations

Rs.

Profit & Loss A/C As On 31St December 2011

1,55,000

Add:

Depreciation

10,000

Transfer To General Reserve

10,000

1,75,000

Less: P & L A/C As On 1St January 2011

75,000

Funds From Operations

1,00,000

Calculation Of Cash From Operations

Funds

from

operations

1,00,000

Add: Decrease In Current Assets

Decrease in debtors

3,000

Decrease in prepaid expenses

200

Increase In Current Liabilities

Increase in creditors

6,000

Increase in outstanding expenses

400

Increase in income received in advance

50

1,09,650

Less: Increase In Current Assets

Increase in bills receivables

3,000

Increase in outstanding income

100

Decrease In Current Liabilities

Decrease in bills payable

2,000

5,100

Cash from operations

1,04,550

Note: decrease in current assets means current assets are converted into cash and increase in current liabilities results in further generation of cash.

Hence they are added. Increase in current assets and decrease in current liabilities result in outflow of cash. Hence they are deducted.

Illustration 4: balance sheets of somy thomas as on 1-1-2011 and 31-12-

2011 were as follows:

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Liabilities 2010 2011

Assets 2010 2011

Rs. Rs.

Rs. Rs.

Credits

40,000

44,000

Cash

10,000 7,000

Bills Payable 25,000

Debtors

30,000 50,000

Loans From

Bank

40,000

50,000

Stock

35,000 25,000

Capital 1,25,000 1,53,000 Machinery 80,000 55,000

Land 40,000 50,000

Building

35,000 60,000

2,30,000 2,47,000

2,30,000 2,47,000

During the year, a machine costing rs.10,000 (accumulated depreciation rs.3,000) was sold for rs.5,000. The provision for depreciation against machinery as on 1-1-2011 was rs.25,000 and on 31-12-2011 it was rs.40,000. Net profit for the year 2011 amounted to rs.45,000. Prepare cash flow statement.

Calculation of Cash From Operations

Rs.

Net Profit For The Year 2011

45,000

Add: Addition To Provision For Depreciation

18,000

Loss Of Sale Of Machinery

2,000

Funds From Operations

65,000

Add:

Decrease

In

Stock

10,000

Increase In Creditors

4,000

79,000

Less: Increase In Debtors

20,000

Decrease In Bills Payable

25,000

----- 45,000

Cash From Operations

34,000

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Capital A/C

To Drawings

17,000

By Balance B/D

1,25,000

(Balancing Figure)

To Balance C/D

1,53,000

By Net Profit For

The Year

45,000

1,70,000

1,70,000

Machinery A/C

To Balance B/D

1,05,000

By Bank Sale

5,000

(80000 + 25000)

By Provision For Dep. 3,000

By P&L A/C – Loss 2,000

By Balance C/D

95,000

(5 5 0 0 0 + 4 0 0 0 0)

1,05,000

1,05,000

Provision For Depreciation A/C

To Machinery A/C 3,000

By Balance B/D 25,000

(Dep. On Machinery

Sold)

By P&L A/C

To Balance C/D

40,000

Dep. For The Current

Year

18,000

43,000 43,000

Cash Flow Statement

Cash As On 1-1-2011 10,000

Add: Inflows

Cash Outflows:

Cash From

Operations

34,000

Drawings

17,000

Loan From Bank

10,000

Purchase Of Land

10,000

Sale Of Machinery 5,000

Purchase Of Building 25,000

Cash As On

31-12-2011

7,000

59,000 59,000

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3.1.3.12 Summary

A funds flow statement officially called as statement of changes in financial position, provides information about an enterprise's investing and financing activities during the accounting period. Though there are many concepts of funds, the working capital concept of funds has been used in this lesson. Flow of funds results only when there is a cross transaction i.e. Only when a transaction involves a fixed asset or liability and a current asset or liability. The main sources of funds are: funds from operations, issue of shares and debentures and sale of non-current assets. The main uses of funds are repayment of long-term liabilities including

redemption of preference shares and debentures, purchase of non-current assets and payment of dividends. Funds flow statement helps the financial analyst in having a more detailed analysis and understanding of changes in the distribution of sources between two balance sheet dates. In addition to funds flow statement concerns are also preparing cash flow statement which is the outcome of cash flow analysis. Cash flow analysis is based on the movement of cash and bank balances and the cash flow statement is a statement depicting changes in cash position from one period to another period.

3.1.3.13 Key Words

Working Capital: working capital is that part of capital used for the purposes of day-to-day operations of a business.

Fund: fund refers to the long term capital used for financing current assets. It can be ascertained by finding the difference between current assets and current liabilities.

Flow of funds: flow refers to transactions which change the size of fund in an organisation. The flow transactions are divided into uses and sources. While the former refers to those transactions which reduce the funds, the latter increases the size of fund.

Cash: cash refers to cash and bank balances.

Cash Flow: cash flow refers to the actual movement of cash in and out of an organisation.

3.1.3.14 Self Assessment Questions

1. What do you mean by working capital concept of funds?
2. Explain the significance of funds flow analysis and cash flow analysis.
3. Distinguish between schedule of changes in working capital and funds flow statement.
4. Distinguish between cash flow analysis and funds flow analysis.
5. Shyam and company has the following information for the year ending
31st march 2012:sales rs.5,000, depreciation rs. 450, other operating expenses rs.4,100

You are required to:

- ⌘ Estimate The Amount Of Funds Generated During The Year.
- ⌘ If The Amount Of Depreciation Increases To Rs.9,000 What Would Be Its Effect On Funds Generated During The Year.
- ⌘ Under What Circumstances Can The Funds From Operation Be Zero?

6. From the following balance sheets of damodar ltd. As on 31st december 2010 and 2011 you are required to prepare:

- ⌘ A Schedule Of Changes In Working Capital
- ⌘ A Funds Flow Statement

Assets

2010

2011

Goodwill

12,000
12,000
Building
40,000
36,000
Plant
37,000
36,000
Investments
10,000
11,000
Stock
30,000
23,400
Bills receivable
2,000 3,200
Debtors
18,000
19,000
Cash at bank
6,600
15,200
1,55,600 1,55,800
Liabilities

2010

2011

Share capital

1,00,000 1,00,000

General reserve

14,000

18,000

Creditors

8,000

5,400

Bills payable

1,200

800

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Provision for taxation

16,000 18,000

Provision for doubtful debts

400 600

Profit & loss a/c

16,000 13,000

1,55,600 1,55,800

Additional information:

₹ Depreciation charged on plant was rs.4,000 And on building

Rs.4,000.

₹ Provision for taxation rs.19,000.

₹ Interim dividend of rs.8,000 Was paid during the year 2011.

7. The financial position of subhulakshmi ltd. On 1-1-2011 and 31-12-2011

Was as follows:

Liabilities

2010 2011 Assets

2010 2011

Rs. Rs.

Rs. Rs.

Current Liabilities 72,000 82,000 Cash

8,000 7,200

Loan From Rosary

40,000 Debtors

70,000 76,800

Ltd.

Stock

50,000 44,000

Loan From Gayatri 60,000 50,000 Land

40,000 60,000

Ltd.

Buildings 1,00,00 1,10,000

Capital & Reserves 2,96,000 2,98,000 Machinery 1,60,00 1,72,000

4,28,000 4,70,000

4,28,000 4,70,000

During the year rs.52,000 were paid as dividends. The provision for

Depreciation against machinery as on 1-1-2011 was rs.54,000 and on 31-

12-2011 was rs.72,000. Prepare a cash flow statement.

3.1.3.15 Key To Self Assessment Questions (For Problems Only)

Q.No.5: (I) Rs.900; (Ii) Rs.900; (Iii) When Other Operating Expenses

Are Increased To Rs.5,000 Or Sales Decreased To Rs.4,100 Without Any

Decrease In Other Operating Expenses.

Q.No.6: Increase In Working Capital Rs.5,000; Funds From Operations

Rs.17,000.

Q.No.7: Funds From Operations Rs.72,000; Cash From Operations

Rs.81,200.

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3.1.3.16 Case Analysis

Given below are the balance sheets of bharathy ltd. For a period of three

years as at 31st march each.

Rs. In lakhs

2010

2011

2012

Liabilities

Share capital in equity shares of rs.10

Each

30 35

35

General reserve

10

15

18

Surplus

5

8

9

13% debentures

10

5

10

Bank credit

5

10 15

Trade creditors

10 12 15

Income tax provision

8

11 14

Proposed dividend

6

10.5 14

84

106.5 130

Assets

Plant and machinery

45

55

70

Investments

10

15

20

Stock

12

15

15

Debtors

14

15

12

Cash and bank

3

6.5

13

84

106.5

Other Details:

₹ Depreciation provided in the books:

₹ 2009-10: Rs.6 Lakhs; 2010-11: rs.8 Lakhs; 2011-12: rs.10 Lakhs

₹ A part of the debentures was converted into equity at par in september 2010.

₹ There was no sale of fixed assets during the period.

As you are the management accountant of the concern, the management seeks your advice on the liquidity position of the company. Analyse the case and advice the management using funds flow analysis.

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Hint:

₹ Calculate funds from operations.

₹ Prepare schedule of changes in working capital.

₹ Prepare funds flow statement.

₹ Calculate current ratio and liquidity ratio.

Based on the above workings suitable advice may be given to the management.

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CHAPTER– IV: Management Accounting**Lesson 4.1: Marginal Costing****4.1.1 Introduction**

Marginal costing is a technique of costing. This technique of costing uses the concept 'marginal cost'. Marginal cost is the change in the total cost of production as a result of change in the production by one unit. Thus marginal cost is nothing but variable cost. In marginal costing technique only variable costs are considered while calculating the cost of the product, while fixed costs are charged against the revenue of the period. The revenue arising from the excess of sales over variable costs is known as 'contribution'. Using contribution as a vital tool, marginal costing helps to a great extent in the managerial decision making process. This unit deals with the various aspects of marginal costing.

4.1.2

Know the meaning of marginal cost.

Understand the various elements of marginal costing technique.

Appreciate the importance of marginal costing as a decision making tool.

Realise the advantages and disadvantages of marginal costing.

Apply Marginal Costing Technique under appropriate situations.

4.1.3 Contents of concepts:

4.1.3.1 Various Elements Of Marginal Costing

4.1.3.2 Benefits Of Marginal Costing

4.1.3.3 Application Of Marginal Costing

4.1.3.4 Limitations Of Marginal Costing

4.1.3.5 Additional Illustrations

4.1.3.6 Summary

4.1.3.7 Key Words

4.1.3.8 Self Assessment Questions

4.1.3.9 Key To Self Assessment Questions

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4.1.3.10 Case Analysis

4.1.3.1 Various Elements Of Marginal Costing

According to the institute of cost and management accountants

(icma), london, marginal cost is 'the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit'. Thus marginal cost is the added cost of an extra unit of output.

$Mc = \text{Direct Material} + \text{Direct Labour} + \text{Other Variable Costs}$

$= \text{Total Cost} - \text{Fixed Cost}.$

Contribution

The difference between selling price and variable cost (or marginal cost) is known as 'contribution' or 'gross margin'. It may be considered as some sort of fund from out of which all fixed costs are met. The difference between contribution and fixed cost represents either profit or loss, as the case may be. Contribution is calculated thus:

Contribution =

Selling Price – Variable Cost

=

Fixed Cost + Profit Or – Loss

It is clear from the above equation that profit arises only when contribution

exceeds fixed costs. In other terms, the point of 'no profit no loss' will be at a level where contribution is equal to fixed costs.

Marginal cost equation

The algebraic expression of contribution is known as marginal cost equation. It can be expressed thus:

$$S - V$$

=

$$F + P$$

$$S - V$$

=

$$C$$

$$C$$

=

$$F + P \text{ And In Case Of Loss}$$

$$C$$

=

$$F - L$$

Where:

$$S$$

=

Sales

$$V$$

=

Variable Cost

C

=

Contribution

F

=

Fixed Cost

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P

=

Profit

L

=

Loss

Profit Volume Ratio (P/V Ratio)

The profitability of business operations can be found out by calculating the p/v ratio. It shows the relationship between contribution and sales and is usually expressed in percentage. It is also known as 'marginal-income ratio', 'contribution-sales ratio' or 'variable-profit ratio'. P/v ratio thus is the ratio of contribution to sales, and is calculated thus:

Contribution

P/V Ratio = ----- X 100

Sales

C S – V F + P

= --- or ----- or -----

S

S

S

Variable Costs

$$= 1 - \text{-----}$$

Sales

The ratio can also be shown by comparing the change in contribution to change in sales, or change in profit to change in sales. Any increase in contribution, obviously, would mean increase in profit, as fixed expenses are assumed to be constant at all levels of production.

Change In Contribution

$$\text{P/V Ratio} = \text{-----}$$

Change In Sales

Change In Profit

$$= \text{-----}$$

Change In Sales

The importance of p/v ratio lies in its use for evaluating the profitability of alternative products, proposals or schemes. A higher ratio shows greater profitability. Management should, therefore, try to increase p/v ratio by widening the gap between the selling price and the variable costs. This can be achieved by increasing sale price, reducing variable costs or switching over to more profitable products.

Break-even analysis is a specific method of presenting and studying the inner relationship between costs, volume and profits. (hence, the name c-v-p analysis). It is an important tool of financial analysis whereby the impact on profit of the changes in volume, price, costs and mix can be found out with a certain amount of accuracy. A business is said to break even when its total sales are equal to its total costs. It is a point of no profit or no loss. At this point contribution is equal to fixed costs. Break-even point, can be calculated thus:

$$\text{B.E.P. (In Units)} = \frac{\text{Fixed Cost}}{\text{Contribution Per Unit}}$$

$$= \frac{\text{Fixed Cost}}{\text{Selling Price/Unit} - \text{Marginal Cost/Unit}}$$

$$\text{B.E.P. (Sales)} = \frac{\text{Fixed Cost}}{\text{Contribution Per Unit}} \times \text{Selling Price/Unit}$$

$$= \frac{\text{Fixed Cost}}{\text{Total Contribution}} \times \text{Total Sales}$$

$$\text{or } = \frac{F \times S}{S - V}$$

$$\text{or } = \frac{\text{Fixed Cost}}{S - V}$$

$$\text{Fixed Cost}$$

or = -----

Variable Cost Per Unit

1 - -----

Selling Price Per Unit

Fixed Cost

or = -----

P/V Ratio

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At break-even point the desired profit is zero. Where the volume of output or sales is to be calculated so as to earn a desired amount of profit, the amount of desired profits has to be added to the fixed cost given in the above formula.

Fixed Cost + Desired Profit

Units To Earn A Desired Profit = -----

Contribution

Per

Unit

Fixed Cost + Desired Profit

Sales To Earn A Desired Profit = -----

P/V Ratio

Cash Break-Even Point

It is the level of output or sales where the cash inflow will be equivalent to cash needed to meet immediate cash liabilities. To this end, fixed costs have to be divided into two parts (i) fixed cost which do not

need immediate cash outlay (depreciation etc.) And (ii) fixed cost which need immediate cash outlay (rent etc.). Cash break-even point can be calculated thus:

$$\text{Cash Break-Even Point (Of Output)} = \frac{\text{Cash Fixed Costs}}{\text{Cash Contribution Per Unit}}$$

Composite Break-Even Point

Where a firm is dealing with several products, a composite breakeven point can be calculated using the following formula:

$$\text{Composite Break-Even Point (Sales)} = \frac{\text{Cash Fixed Costs}}{\text{Composite P/V Ratio}}$$

$$\text{or} = \frac{\text{Total Fixed Costs} \times \text{Total Sales}}{\text{Total Contribution}}$$

$$\text{or} = \frac{\text{Total Contribution}}{\text{Total Sales}} \times 100$$

Total Sales

Margin of Safety

Total sales minus the sales at break-even point is known as the margin of safety. Lower break-even point means a higher margin of safety. Margin of safety can also be expressed as a percentage of total sales. The formula is:

Margin Of Safety = Total Sales – Sales At B.E.P.

Profit

or = -----

P/V Ratio

Margin

Of

Safety

Margin Of Safety = ----- X 100

(As A Percentage) Total Sales

Higher margin of safety shows that the business is sound and when sales substantially come down, (but not below break even sales) profit might be earned by the business. Lower margin of safety, as pointed out earlier, means that when sales come down slightly profit position might be affected adversely. Thus, margin of safety can be used to test the soundness of a business. In order to improve the margin of safety a business can increase selling prices (without affecting demand, of course) reducing fixed or variable costs and replacing unprofitable products with profitable one.

Illustration 1: beta manufacturers ltd. Has supplied you the following information in respect of one of its products:

Total Fixed Costs

18,000

Total Variable Costs

30,000

Total

Sales

60,000

Units

Sold

20,000

Find out (a) contribution per unit, (b) break-even point, (c) margin of safety, (d) profit, and (e) volume of sales to earn a profit of rs.24,000.

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Solution:

60,000

Selling Price Per Unit

=

=

Rs.3

20,000

30,000

Variable Cost Per Unit

=

$$= \text{Rs.}1.50$$

20,000

(A) Contribution Per Unit = Selling Price Per Unit – Variable Cost Per Unit

$$= \text{Rs.}3 - \text{Rs.}1.50$$

$$= \text{Rs.}1.50$$

Total Fixed Cost

(B) Break-Even Point = -----

Contribution Per Unit

Rs.18,000

$$= \text{-----}$$

Rs.1.50

$$= 12,000 \text{ Units}$$

(C) Margin Of Safety = Units Sold – Break-Even Point

$$= 20,000 - 12,000$$

$$= 8,000 \text{ Units (Or) Rs.}24,000$$

(D) Profit

$$= (\text{Units Sold} \times \text{Contribution Per Unit}) -$$

Fixed Cost

$$= (20,000 \times \text{Rs.}1.50) - \text{Rs.}18,000$$

$$=$$

Rs.12,000

(E) Volume Of Sales To Earn A Profit Of Rs.24,000

Fixed Cost + Desired Profit

=

Contribution

Per

Unit

18,000 + 24,000

= ----- = 28,000 units

1.50

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Illustration 2: Calculate 'Margin Of Safety' from the following data:

Particulars

Mary & Co.

Geetha & Co.

Sales

1,00,000

1,00,000

Cost

80,000

80,000

Fixed – Mary & Co.

30,000

Geetha & Co.

50,000
Variable – Mary & Co.
50,000
Geetha & Co.

30,000

Profit
20,000
20,000

Solution:

Particulars
Mary& Co.
Geetha& Co.
Actual
Sales
1,00,000
1,00,000
Less: Sales At Break-Even Point
60,000

71,429

Marginal Of Safety

40,000

28,571

Fixed Cost

Break-Even Sales = -----

P/V Ratio

Sales – Variable Cost

P/V Ratio = -----

Sales

Therefore;

P/V Ratio

1,00,000

1,00,000

- 50,000

- 30,000

50,000

70,000

50%

70%

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30,000

50,000

Break-Even Sales = -----

50%

70%

Rs.60,000

Rs.71,429

Illustration 3:

From the following particulars, find out the selling price per unit

if b.e.p. is to be brought down to 9,000 units.

Variable Cost Per Unit Rs.75

Fixed Expenses Rs.2,70,000

Selling Price Per Unit Rs.100

Solution:

Let us assume that the contribution per unit at B.E.P. Sales of 9,000

is X.

Fixed Cost

B.E.P. = -----

Contribution Per Unit

Contribution per unit is not known. Therefore,

2,70,000

9,000 Units = -----

X

9,000 X = 2,70,000

X = 30

Contribution is Rs.30 Per Unit, In Place Of Rs.25. So, The Selling Price

Should Be Rs.105, I.E. Rs.75 + Rs.30.

4.1.3.2 Benefits Of Marginal Costing

The technique of marginal costing is of immense use to the management in taking various decisions, as explained below:

1. How Much To Produce?

Marginal costing helps in finding out the level of output which is most profitable for running a concern. This, in turn, helps in utilising plant capacity in full, and realise maximum profits. By determining the most

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profitable relationships between cost, price and volume, marginal costing helps a business determine most competitive prices for its products.

2. What To Produce?

By applying marginal costing techniques, the most suitable production line could be determined. The profitability of various products can be compared and those products which languish behind and which do not seem to be feasible (in view of their inability to recover marginal costs), may be eliminated from the production line by using marginal costing. It, thus, helps in selecting an optimum mix of products, keeping the capacity and resource constraints in mind. It will also serve as a guide in arriving at the price for new products.

3. Whether To Produce Or Procure?

The marginal cost of producing an article inside the factory serves as a useful guide while arriving at make or buy decisions. The costs of manufacturing can be compared with the costs of buying outside and a

suitable decision can be arrived at easily.

4. How To Produce?

In case a particular product can be produced by two or more methods, ascertaining the marginal cost of producing the product by each method will help in deciding as to which method should be allowed. The same is true in case of decisions to use machine power in place of manual labour.

5. When To Produce?

In periods of trade depression, marginal costing helps in deciding whether production in the plants should be suspended temporarily or continued in spite of low demand for the firm's products.

6. At What Cost To Produce?

Marginal costing helps in determining the no profit- no-loss point.

The efficiency and economy of various products, plants, departments can

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also be determined. This helps in profit planning as well as cost control.

4.1.3.3 Application Of Marginal Costing

Marginal costing technique helps management in several ways.

These are discussed below:

1. Profit Planning

There are four important ways of improving the profit performance of a business: (i) increasing the volume, (ii) increasing the selling price, (iii) Decreasing variable cost, and (iv) decreasing fixed costs. Profit planning is the planning of future operations so as to attain maximum profit. The

contribution ratio shows the relative profitability of various sectors of business whenever there is a change in the selling price, variable cost etc.

Illustration 4:

Two businesses, p ltd. And q ltd. Sell the same type of product in the same type of market. Their budgeted profit and loss accounts for the coming year are as under:

P Ltd.

Q Ltd.

Sales

1,50,000

1,50,000

Less: Variable Costs 1,20,000

1,00,000

Fixed Costs

15,000 1,35,000 35,000 1,35,000

Budget Net Profit

15,000

15,000

You are required to:

⌘ Calculate the break-even point for each business

⌘ Calculate the sales volume at which each business will earn

rs.5,000 Profit.

⌘ State which business is likely to earn greater profit in conditions

of:

1. Heavy demand for the product
 2. Low demand for the product, and, briefly give your argument
- also.

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Solution:

(I) For Calculating The Break-Even Points, P/V Ratio Of P Ltd. And Q Ltd.,

Should Be Calculated:

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}}$$

$$= \frac{\text{Fixed Expenses} + \text{Profit}}{\text{Sales}}$$

$$= \frac{15,000 + 15,000}{1}$$

$$\text{P/V Ratio Of P} = \frac{30,000}{150,000} = 20\%$$

$$= \frac{1,50,000}{5}$$

$$\text{P/V Ratio Of Q} = \frac{35,000 + 15,000}{1}$$

$$= \frac{50,000}{1,50,000} = 3 \frac{1}{3}\%$$

$$= \frac{1,50,000}{3}$$

3

Fixed Expenses

Break-Even Point = -----

P/V

Ratio

15,000

P Ltd. = -----

= Rs.75,000

1/5

35,000

Q Ltd. = -----

= Rs.1,05,000

1/3

(II) Sales Volume To Earn A Desired Profit (Rs.5000):

Fixed Expenses + Desired Profit

Formula = -----

P/V

Ratio

15,000 + 5,000

P Ltd. = -----

= Rs.1,00,000

1/5

192

35,000 + 5,000

Q Ltd. = ----- = Rs.1,20,000

⌘ In conditions of heavy demand, a concern with larger p/v ratio can earn greater profits because of greater contribution. Thus, q ltd. Is likely to earn greater profit.

⌘ In conditions of low demand, a concern with lower break-even point is likely to earn more profits because it will start earning profits at a lower level of sales. In this case, p ltd. Will start earning profits when its sales reach a level of rs.75,000, Whereas q ltd. Will start earning profits when its sales reach rs.1,05,000. Therefore, in case of low demand, break-even point should be reached as early as possible so that the concern may start earning profits.

2. Introduction Of A New Product

Sometimes, a product may be added to the existing lines of products with a view to utilise idle facilities, to capture a new market or for any other purpose. The profitability of this new product has to be found out initially. Usually, the new product will be manufactured if it is capable of contributing something toward fixed costs and profit after meeting its variable costs.

Illustration 5:

A concern manufacturing product x has provided the following information:

Rs.

Sales

75,000

Direct
materials
30,000
Direct labour
10,000
Variable
overhead
10,000
Fixed
overhead
15,000

In order to increase its sales by rs.25,000, the concern wants to introduce the product y, and estimates the costs in connection therewith as under:

Direct
materials
10,000
Direct labour
8,000
Variable overhead
5,000
193
Fixed overhead
Nil

Advise whether the product Y will be profitable or not.

Solution:

Marginal Cost Statement

(in Rupees)

X

Y

Total

Sales

75,000

25,000 1,00,000

Less: marginal costs:

Direct materials

30,000

10,000 40,000

Direct labour

10,000 8,000 18,000

Variable overhead

10,000

5,000 15,000

50,000

23,000 73,000

Contribution

25,000 2,000 27,000

Fixed

cost

15,000

Profit

12,000

Commentary: if product Y is introduced, the profitability of product X is not affected in any manner. On the other hand, product Y provides a contribution of Rs.2,000 Towards fixed cost and profit. Therefore, Y should be introduced.

3. Level Of Activity Planning

Marginal costing is of great help while planning the level of activity.

Maximum contribution at a particular level of activity will show the position of maximum profitability.

Illustration 6:

Following is the cost structure of sundaram corporation, pondicherry, manufacturers of colour tvs.

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Level

of

activity

50%

70%

90%

Output (in units)

200

280

360

Cost (in rs.)

Materials

10,00,000 14,00,000 18,00,000

Labour

3,00,000 4,20,000

5,40,000

Factory overhead

5,00,000 6,00,000

7,00,000

Factory Cost 18,00,000 24,20,000 30,40,000

In view of the fact that there will be no increase in fixed costs

and import license for the picture tubes required in the manufacture of its tvs has been obtained, the corporation is considering an increase in production to its full installed capacity.

The management requires a statement showing all details of production costs at 100% level of activity.

Solution:

Marginal Cost Statement

(At 100% Level Of Activity Total Cost Cost Per Unit

With 400 Units)

Rs. Rs.

Materials

20,00,000

5,000

Labour

6,00,000 1,500

Variable Factory Overhead

5,00,000 1,250

Marginal Factory Cost

31,00,000 7,750

Fixed Factory Overhead

2,50,000

625

Total factory cost

33,50,000

8,375

Thus, the marginal factory cost per unit is rs.7,750 and the total production cost per unit is rs.8,375.

Commentary:

(i) Calculation Of Variable Factory Overheads Per Unit:

$$\frac{\text{Rs.6,00,000} - \text{Rs.5,00,000}}{80 \text{ Units}} = \text{Rs.1,250}$$

80 Units

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(II) Calculation Of Fixed Factory Overheads:

Factory Overheads – (No. Of Units At Certain Level Of Activity X Variable Factory Overheads Per Unit).

Therefore Rs.5,00,000 – (200 Units X 1,250)

Therefore Rs.5,00,000 – Rs.2,50,000 = Rs.2,50,000

The Amount Can Be Verified By Making Calculation At Any Other Level Of Activity.

(III) Variable Factory Overheads At 100% Level Of Activity:

400 Units X 1,250 = Rs.5,00,000

4. Key Factor

A concern would produce and sell only those products which offer maximum profit. This is based on the assumption that it is possible to produce any quantity without any difficulty and sell likewise. However, in actual practice, this seems to be unrealistic as several constraints come in the way of manufacturing as well as selling. Such constraints that come in

the way of management's efforts to produce and sell in unlimited quantities are called 'key factors' or 'limiting factors'. The limiting factors may be materials, labour, plant capacity, or demand. Management must ascertain the extent of the influence of the key factor for ensuring maximisation of profit. Normally, when contribution and key factors are known, the relative profitability of different products or processes can be measured with the help of the following formula:

Contribution

Profitability = -----

Key Factor

Illustration 7: from the following data, which product would you

recommend to be manufactured in a factory, time, being the key factor?

Per

Unit

of

Per

Unit

of

Product

X

Product

Y

Direct Material

14

Direct Labour At Re.1 Per Hour 2

3

Variable Overhead At Rs.2 Per Hour 4

6

Selling Price

100

110

Standard Time To Produce

2 Hours

3 Hours

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Solution:

Per Unit of Per Unit of

Product X

Product Y

Selling Price

100 110

Less: Marginal Cost:

Direct Materials

24

14

Direct Labour

2 3

Variable Overhead

4 30 6 23

Contribution

70

87

Standard Time To Produce

2 Hours

3 Hours

Contribution Per Hour

$70/2$

$87/3$

= Rs.35

= Rs.29

Contribution per hour of product x is more than that of product y by rs.6. Therefore, product x is more profitable and is recommended to be manufactured.

5. Make Or Buy Decisions

A company might be having unused capacity which may be utilized for making component parts or similar items instead of buying them from the market. In arriving at such 'make or buy' decision, the cost of manufacturing component parts should be compared with price quoted in the market. If the variable costs are lower than the purchase price, the component parts should be manufactured in the factory itself. Fixed costs

are excluded on the assumption that they have been already incurred, and the manufacturing of components involves only variable cost. However, if there is an increase in fixed costs and any limiting factor is operating while producing components etc. That should also be taken into account. Consider the following illustration, throwing light on these aspects.

Illustrations 8:

You are the management accountant of XYZ CO. Ltd. The Managing director of the company seeks your advice on the following problem: the company produces a variety of products each having a number of computer parts. Product “B” takes 5 hours to produce on machine no.99 working at full capacity. “bB” has a selling price of rs.50 and a marginal cost, Rs.30 per unit. “A-10” a component part could be made on the same machine in 2 hours for marginal cost of Rs.5 per unit. The supplier’s price is Rs.12.50 per unit. Should the company make or buy “A10”?

Assume that machine hour is the limiting factor.

Solution:

In this problem the cost of new product plus contribution lost during the time for manufacturing “A-10” should be compared with the supplier’s price to arrive at a decision.

Rs.

“B”

—

Selling

Price

50.00

Marginal Cost

30.00

20.00

It takes 5 hours to produce one unit of "B".

Therefore, contribution earned per hour on machine no.99 is $\text{Rs.}20/5 =$

$\text{Rs.}4$. "A-10" takes two hours to be manufactured on machine which is

producing "B". Real cost of "A-10" to the company = marginal cost of "aA-

10" plus contribution lost for using the machine for "A-10".

$\text{Rs.}5 + \text{Rs.}8 = \text{Rs.}13$

This is more than the seller's price of $\text{rs.}12.50$ and so it is advisable for the

company to buy the product from outside.

Illustration 9:

A t.V. Manufacturing company finds that while it costs $\text{Rs.}6.25$ To

make each component X, the same is available in the market at $\text{Rs.}4.85$

Each, with an assurance of continued supply. The break down of cost is:

Rs.

Materials

2.75

Each

Labour

1.75

Each

Other Variables

0.50 Each

Depreciation And Other Fixed Costs

1.25 Each

6.25

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Should you make or buy?

Solution:

Variable cost of manufacturing is Rs.5; (Rs.6.25 – Rs.1.25) but the market price is Rs.4.85. If the fixed cost of Rs.1.25 is also added, it is not profitable to make the component. Because there is a saving of Rs.0.15 even in variable cost, it is profitable to procure from outside.

6. Suitable Product Mix/Sales Mix

Normally, a business concern will select the product mix which gives the maximum profit. Product mix is the ratio in which various products are produced and sold. The marginal costing technique helps management in taking appropriate decisions regarding the product mix, i.e., in changing the ratio of product mix so as to maximise profits. The technique not only helps in dropping unprofitable products from the mix but also helps in dropping unprofitable departments, activities etc.

Consider the following illustrations:

Illustration 10: (Product Mix)

The following figures are obtained from the accounts of a departmental store having four departments.

Departments

(Figures

In

Rs.)

Particulars A

B C D Total

Sales

5,000

8,000

6,000 7,000 26,000

Marginal Cost 5,500

6,000

2,000 2,000 15,500

Fixed Cost 500

4,000

1,000

1,000 6,500

(Apportioned)

Total Cost 6,000

10,000

3,000

3,000 22,000

Profit/Loss(-) 1,000 (-) 2,000 3,000 4,000 4,000

On the above basis, it is decided to close down dept. B immediately, as the loss shown is the maximum. After that dept. A will be discarded. What is your advice to the management?

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Statement Of Comparative Profitability

Departments

Particulars A

B

C D Total

Sales

5,000

8,000

6,000 7,000 26,000

Less:

Marginal Cost 5,500

6,000

2,000 2,000 15,500

Contribution (-) 500 2,000

4,000

5,000 10,500

Fixed Cost

6,500

Profit

4,000

Commentary:

From the above, it is clear that the contribution of dept. A is negative and should be discarded immediately. As dept. B provides rs.2,000 towards fixed costs and profits, it should not be discarded.

Illustration 11 (Sales Mix):

Present the following information to show to the management:

(a) the marginal product cost and the contribution per unit; (b) the total contribution and profits resulting from each of the following mixtures:

Product

Per

Unit

(Rs.)

Direct Materials

A

10

B

9

Direct Wages

A

3

B

2

Fixed Expenses Rs.800

Variable Expenses Are Allocated To Products As 100% Of Direct Wages.

Rs.

Sales Price

A

20

B

15

200

Sales Mixtures:

₹ 1000 Units Of Product A And 2000 Units Of B

₹ 1500 Units Of Product A And 1500 Units Of B

₹ 2000 Units Of Product A And 1000 Units Of B

Solution:

(A) Marginal Cost Statement

A

B

Direct

Materials

10

9

Direct Wages

3

2

Variable Overheads (100%)

3

2

Marginal

Cost

16

13

Sales Price

20

15

Contribution

4

2

1000 A+

1500 A+

2000 A+

(B) Sales Mix

2000 B

1500 B

1000B

Choice

(I)

(II)

(III)

(Rs.)

(Rs.)

(Rs.)

Total Sales

$(1000 \times 20 + (1500 \times 20 +$

$(2000 \times 20 +$

$2000 \times 15) = 1500 \times 15) =$

$1000 \times 15) =$

50,000

52,500

55,000

$(1000 \times 16 + (1500 \times 16 +$

$(2000 \times 16 +$

$2000 \times 13) = 1500 \times 13) =$

$1000 \times 13) =$

Less: Marginal Cost 42,000

43,500

45,000

Contribution

8,000 9,000

10,000

Less: fixed costs

800

800

800

Profit

7,200

8,200

9,200

Therefore sales mixture (iii) will give the highest profit; and as such, mixture (iii) can be adopted.

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7. Pricing Decisions

Marginal costing techniques help a firm to decide about the prices of various products in a fairly easy manner. Let's examine the following cases:

(I) Fixation of Selling Price

Illustration 12:

P/V Ratio Is 60% and the marginal cost of the product is Rs.50.

What will be the selling price?

Solution:

$S - V$

V

C

P/V Ratio = -----

= 1 - ----- = -----

S

S

S

Variable Cost

40

----- = 40%

or -----

Sales

100

50 50 X 100

Selling Price = -----

= ----- = Rs.125

40%

40

(ii) Reducing Selling Price

Illustration 13:

The Price Structure Of A Cycle Made By The Visu Cycle Co. Ltd. Is

As Follows:

Per Cycle

Materials

60

Labour
20
Variable Overheads

20

Fixed
Overheads
100

Profit
50
Selling Price
50

200
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This is based on the manufacture of one lakh cycles per annum.

The company expects that due to competition they will have to reduce selling prices, but they want to keep the total profits intact. What level of production will have to be reached, i.e., how many cycles will have to be made to get the same amount of profits, if:

- (a) the selling price is reduced by 10%?
- (b) the selling price is reduced by 20%?

Solution:

(Rs.)

(Rs.)

Existing profit

$$= 1,00,000 \times 50 =$$

50,00,000

$$\text{Total fixed overheads} = 1,00,000 \times 50 =$$

50,00,000

(a) Selling price is reduced by 10% and to get the existing profit of rs.50

lakhs.

New Selling Price

=

$$200 - 10\% \text{ Of Rs.}200$$

=

$$200 - 20 = \text{Rs.}180$$

New Contribution

=

$$180 - 100 = \text{Rs.}80 \text{ Per Unit}$$

Total Sales (Units)

=

F + P/Contribution Per Unit

5,00,000

+

5,00,000

=

80

=

1,25,000

Cycles

Are to be obtained and sold to earn the existing profit of rs.5,00,000.

(b) Selling price reduced by 20% and to get the existing profit of rs.5,00,000.

New Selling Price

=

200 – 20% Of Rs.200

=

200 – 40 = Rs.160

New Contribution

=

S – V

=

160 – 100 = Rs.80 Per Unit

Total Sales (Units)

=

F + P/Contribution Per Unit

5,00,000

+

5,00,000

= -----

60

=

1,66,667 cycles are to be produced

and sold to earn the existing profit of rs.50 Lakhs.

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(iii) Pricing During Recession:

Illustration 14:

SSA company is working well below normal capacity due to recession. The directors of the company have been approached with an enquiry for special job. The costing department estimated the following in respect of the job.

Direct

Materials

Rs.10,000

Direct Labour 500 Hours @

Rs.2 Per Hour

Overhead Costs: Normal Recovery Rates

Variable

Re.0.50

Per

Hour

Fixed

Re.1.00

Per

Hour

The directors ask you to advise them on the minimum price to be charged.

Assume that there are no production difficulties regarding the job.

Solution:

Calculation Of Marginal Cost:

(Rs.)

Direct

Materials

10,000

Direct Labour

1,000

Variable Overhead @ Re.0.50 Per Hour

250

Marginal

Cost

11,250

Commentary:

Here the minimum price to be quoted is Rs.11,250 which is the marginal cost. By quoting so, the company is sacrificing the recovery of the profit and the fixed-costs. The fixed costs will continue to be incurred even if the company does not accept the offer. So any price above Rs.11,250 is welcome.

Accepting Foreign Order

Marginal costing technique can also be used to take a decision as to whether to accept a foreign offer or not. The speciality of 204

this situation is that normally foreign order is requiring the manufacturer to supply the product at a price lower than the inland selling price. Here the decision is taken by comparing the marginal cost of the product with the foreign price offered. If the foreign order offers a price higher than the marginal cost then the offer can be accepted subject to availability of sufficient installed production capacity. The following illustration highlights this decision:

Illustration 15:

Due to industrial depression, a plant is running at present at 50% of the capacity. The following details are available:

Cost Of Production Per Unit

(Rs.)

Direct Materials

2

Direct Labour

1

Variable Overhead

3

Fixed Overhead

2

8

Production Per Month

20,000 Units

Total Cost Of Production

Rs.1,60,000

Sale

Price

Rs.1,40,000

Loss

Rs.20,000

An exporter offers to buy 5000 units per month at the rate of rs.6.50 per unit and the company is hesitant to accept the order for fear of increasing its already large operating losses. Advise whether the company should accept or decline this offer.

Solution:

At present the selling price per unit is Rs.7/- and the marginal cost per unit is Rs.6/- (Material Rs.2 + Labour Re.1 + Variable Overhead Rs.3).

The foreign order offers a price of Rs.6.50 and there is ample production capacity (50%) available. Since the foreign offer is at a price higher than marginal cost the offer can be accepted. This is proved hereunder:

(Rs.)

Marginal Cost Of 5000 Units

$$= 5000 \times 6$$

$$= 30,000$$

Sale Price Of 5000 Units

$$= 5000 \times 6.50$$

$$= 32,500$$

Profit

$$2,500$$

Thus by accepting the foreign order the present loss of Rs.20,000 would be reduced to Rs.17,500 I.E., Rs.20000 Loss – Rs.2,500 Profit.

4.1.3.4 Limitations Of Marginal Costing

Marginal costing has the following limitations:

1.difficulty in classification:

In marginal costing, costs are segregated into

Fixed and variable. In actual practice, this classification scheme proves to be

Superfluous in that, certain costs may be partly fixed and partly variable and

Certain other costs may have no relation to volume of output or even

with the time. In short, the categorisation of costs into fixed and variable

elements is a difficult and tedious job.

2. Difficulty In Application:

the marginal costing technique cannot be applied in industries where large stocks in the form of work-in-progress (job and contracting firms) are maintained.

3. Defective Inventory Valuation:

under marginal costing, fixed costs are not included in the value of finished goods and work in progress. As fixed costs are also incurred, these should form part of the cost of the product. By eliminating fixed costs from finished stock and work-in-progress, marginal costing techniques present stocks at less than their true value. Valuing stocks at marginal cost is objectionable because of other reasons also:

1. In case of loss by fire, full loss cannot be recovered from the

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insurance company.

2. Profits will be lower than that shown under absorption costing

and hence may be objected to by tax authorities.

3. Circulating assets will be understated in the balance sheet.

4. Wrong Basis For Pricing:

In marginal costing, sales prices are arrived at on the basis of contribution alone. This is an objectionable practice. For example, in the long run, the selling price should not be fixed on the basis of contribution alone as it may result in losses or low profits. Other important factors such as fixed costs, capital employed should also be taken into account while

fixing selling prices. Further, it is also not correct to lay more stress on selling function, as is done in marginal costing, and relegate production function to the background.

5.Limited Scope:

The utility of marginal costing is limited to short-run profit planning and decision-making. For decisions of far-reaching importance, one is interested in special purpose cost rather than variable cost. Important decisions on several occasions, depend on non-cost considerations also, which are thoroughly discounted in marginal costing.

In view of these limitations, marginal costing needs to be applied with necessary care and caution. Fruitful results will emerge only when management tries to apply the technique in combination with other useful techniques such as budgetary control and standard costing.

4.1.3.5 Additional Illustrations

Illustration 16:

from the following information, find out the amount of profit earned during the year, using marginal cost equation:

Fixed

Cost

Rs.5,00,000

Variable

Cost

Rs.10

Per

Unit

Selling

Price

Rs.15

Per

Unit

Output Level

1,50,000 Units

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Solution:

Contribution = Selling Price – Variable Cost

$= (1,50,000 \times 15) - (1,50,000 \times 10)$

=

Rs.22,50,000

–

Rs.15,00,000

=

Rs.7,50,000

Contribution = Fixed Cost + Profit

$Rs.7,50,000 = 5,00,000 + \text{Profit}$

$\text{Profit} = 7,50,000 - 5,00,000$

=

(C

–

F)

Profit = Rs.2,50,000

Illustration 17:

Determine the amount of fixed costs from the following details,
using the marginal cost equation.

Sales

Rs.2,40,000

Direct Materials

Rs. 80,000

Direct Labour

Rs. 50,000

Variable Overheads Rs. 20,000

Profit

Rs. 50,000

Solution:

Marginal Costing Equation = $S - V = F + P$

=

2,40,000

—

1,50,000

=

F

+

P

=

90,000

=

F

+

50,000

$$F = 90,000 - 50,000$$

$$F = \text{Rs.}40,000$$

Illustration 18:

Sales 10,000 Units @ Rs.25 Per Unit

Variable Cost Rs.15 Per Unit

Fixed Costs Rs.1,00,000

Find Out The Sales For Earning A Profit Of Rs.50,000

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Solution:

Sales To Earn A Profit Of Rs.50,000

(Fixed Cost + Profit) Sales

=

Sales – Variable Cost

$$1,00,000 + 50,000 \text{ X } 2,50,000$$

=

$$2,50,000 - 1,50,000$$

1,50,000 X 2,50,000

=

1,00,000

=

Rs.3,75,000

Illustration 19:

The records of ram ltd., Which has three departments give the following figures:

Dept. A

Dept. B

Dept. C

Total

(Rs.)

(Rs.)

(Rs.)

(Rs.)

Sales

12,000

18,000

20,000

50,000

Marginal Cost 13,000

6,000

15,000

34,000

Fixed Cost

1,000

4,000

10,000

15,000



Total Cost

14,000

10,000

25,000

49,000

Profit/Loss

-2,000 +8,000

-5,000 1,000

The management wants to discontinue product c immediately as it gives the maximum loss. How would you advise the management?

Solution:

Marginal Cost Statement

Particulars

A

B

C

Total

(Rs.)

(Rs.)

(Rs.)

(Rs.)

Sales

12,000

18,000

20,000

50,000

Less: Marginal Cost 13,000

6,000 15,000 34,000

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Contribution

-1,000

12,000

5,000

16,000

Fixed

Cost

15,000

Profit

1,000

Here department A gives negative contribution, and as such it can be given up. Department C gives a contribution of Rs.5,000. If department C is closed, then it may lead to further loss. Therefore, C should be continued.

Summary

Marginal costing is an important technique of costing where only variable costs are considered while calculating the cost of the product.

It is a technique of presenting cost information and can be used with other methods of costing (such as job costing, contract costing, etc). This technique can be applied while taking decisions relating to profit planning, introducing a new product, level of activity planning, allocating scarce factors to profitable channels, make or buy decisions, suitable production/sales mix, fixing prices for products, etc. However this technique is not without limitations.

4.1.3.7 Key Words

Marginal costing: the change in total cost because of change in total output by one unit which is otherwise called as variable cost.

Contribution: the excess of selling price over variable cost.

Profit volume ratio: it shows the relationship between contribution and sales.

Break even point: it is that point of sales at which there is no profit or no loss i.e. Where total revenues and total costs are equal.

Margin of safety: excess of actual sales over break-even sales.

Marginal cost equation:

$$S - V = C$$

$$C = F + P$$

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4.1.3.8 Self Assessment Questions

1. Define marginal cost.
2. What is meant by contribution? Explain its significance.
3. Explain the following:
 - ⌘ Profit Volume Ratio
 - ⌘ Break Even Point
 - ⌘ Margin Of Safety
4. Explain how marginal costing technique is useful as a decision making tool.
5. Critically evaluate marginal costing technique.
6. Break-down of cost per unit at an activity level of 10,000 units of a company is as follows:

Rs.

Raw materials

10

Direct expenses

8

Chargeable expenses

2

Variable overheads

4

Fixed overheads

6

Total cost per unit

30

Selling

price

32

Profit per unit

2

How many units must be sold to break-even?

7. Tamarai ltd., gives you the following information:

Sales

Profit

Rs.

Rs.

Period

I

1,50,000

20,000

Period

II

1,70,000

25,000

Calculate:

(a) the p/v ratio.

(b) the profit when sales are rs.2,50,000

(c) the sales required to earn a profit of rs.40,000

(d) the break-even point.

8. Production costs of selvi enterprises limited are as follows:

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Level of Activity

Output (In %Ge)

60%

70%

80%

Output (In Units)

1,200

1,400

1,600

Direct Materials

24,000

28,000

32,000

Direct Labour

7,200

8,400

9,600

Factory Overheads

12,800

13,600

14,400

Works Cost

44,000

50,000

56,000

A proposal to increase production to 90% level of activity is under consideration of the management. The proposal is not expected to involve any increase in fixed factory overheads.

[Hint: fixed factory overheads rs.8,000]

9. The following expenses are incurred in the manufacture of 1,000 units of a product in the manufacture of which a factory specialises:

Raw

materials

2,800

Wages

1,900

Overhead charges (rs.4,000 fixed)

4,200

10,000 units of the product can be absorbed by the home market where the selling price is rs.9 per unit. There is a demand for 50,000 units of the product in a foreign market if it can be offered at rs.8.20 per unit. If

This is done, what will be the total profit or loss made by the manufacturer?

10. The following data are obtained from the records of a factory:

Rs.

Rs.

Sales 4000 units @ rs.25 Each

1,00,000

Less: marginal cost

Materials

consumed

40,000

Labour

charges

20,000

Variable

overheads

12,000

72,000
Fixed cost
18,000 90,000

Profit
10,000

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It is proposed to reduce the selling price by 20%. What extra units should be sold to obtain the same amount of profit as above?

4.1.3.9 Key To Self Assessment Questions

(for problems only)

Q.No.6:

7500 Units.

Q.No.7:

(A) 25%; (B) Rs.45,000; (C) Rs.2,30,000; (D) Rs.70,000.

Q.No.8:

Prime Cost Rs.46,800; Marginal Cost Rs.54,000; Works Cost

Rs.62,000.

Q.No.9:

Profit Rs.2,02,000.

Q.No.10:

10,000 Units.

4.1.3.10 Case Analysis

The cost per unit of the three products x, y and z of a concern is

As follows:

X

Y

Z

(Rs.)

(Rs.)

(Rs.)

Direct Material

6

7

6

Direct Labour

10

8

9

Variable Expenses

4

5

3

Fixed Expenses

3

3

2

23

23

20

Profit

9

7

6

Selling Price

32

30

26

No. Of Units Produced

10,000

5,000 8,000

Production arrangements are such that if one product is given up, the production of the others can be raised by 50%. The directors propose that z should be given up because the contribution in that case is the lowest.

Analyse the case and give your opinion.

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Solution:

Statement of projected profitability with products x and y

X

Y

Production (In Units)

10000 5000

Add 50% Increase (Proposed)

5000

2500

15000

7500

Selling Price Per Unit

32

30

Less: variable cost per unit

Materials

6

7

Labour

10

8

Variable expenses

4

5

20

20

Contribution per unit

12

10

Total contribution

X

15000 Units X Rs.12

=

Rs.1,80,000

Y

7500 Units X Rs.10

=

Rs. 75,000

Rs.2,55,000

Less: Fixed Cost

X

10000 X 3

=

30000

Y

5000 X 3

=

15000

Z

8000 X 2

=

16000

Rs. 61,000

Projected Profit

=

Rs.1,94,000

Statement Of Present Profit With Products X, Y And Z

Rs.

Product X =

10000 Units X Rs.9 =

90,000

Product Y =

5000 Units X Rs.7 =

35,000

Product Z

=

8000 Units X Rs.6 =

48,000

1,73,000

Since by discontinuing product z and increasing the production of products X and Y the profit increases from Rs.1,73,000 to Rs.1,94,000. The directors proposal may be implemented.

Lesson 4.2 - Cost Volume Profit Analysis

4.2.1 Introduction

The cost of a product consists of two items: fixed cost and variable cost. Fixed costs are those which remain the same in total amount regardless of changes in volume. Variable costs are those which vary in total amount as the volume of production increases or decreases. As a result, at different levels of activity, the cost structure of a firm changes. The effect on profit on account of such variations is studied through break even analysis or cost-volume-profit analysis. This lesson deals with the various concepts, tools and techniques of cost-volume profit analysis.

4.2.2 Learning Objectives

After reading this lesson, the reader should be able to:

- ⌘ understand the meaning of cost-volume-profit analysis.
- ⌘ apply cost-volume-profit analysis while taking decisions.
- ⌘ construct the break-even chart.
- ⌘ evaluate the advantages and limitations of break-even analysis.

4.2.3 Contents

4.2.3.1 Meaning Of Cost-Volume-Profit Analysis

4.2.3.2 Application Of Cost-Volume-Profit Analysis

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4.2.3.5 Profit Volume Graph

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4.2.3.1 Meaning of Cost-Volume-Profit Analysis

Cost-volume-profit (CVP) analysis focuses on the way cost and profit change when volume changes. It is, broadly speaking, that system of analysis which determines the probable profit at any level of activity. This technique is generally used to analyse the incremental effect of volume on costs, revenues and profits. At what volume of operations are costs and revenues equal? What volume of output or sales would be necessary to earn a profit of say rs.2 lakhs? How much profit will be earned at a volume of, say 10,000 units? What will happen if there is a reduction of 10 percent in the selling price? Questions like these are sought to be answered through cvp analysis. This detailed analysis will help the management to know the profit levels at different activity levels of production and sales and various types of costs involved in it.

4.2.3.2 Application Of Cost-Volume-Profit Analysis

CPV analysis helps in:

⌘ Forecasting the profit in an accurate manner

⌘ Preparing the flexible budgets at different levels of activity

⌘ Fixing prices for products

Illustration 1:

(Profit Planning) based on the following information, find out the break even point, the sales needed for a profit of rs.6,00,000 and the profit if 4,00,000 units are sold at rs.6 per unit.

Units Of Output

5,00,000

Fixed

Costs

Rs.7,50,000

Variable Cost Per Unit

Rs. 2

Selling Price Per Unit

Rs. 5

Solution:

(1)Break-Even Point (Of Sales)

Fixed Costs

= ----- X Selling Price Per Unit

Contribution Per Unit

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7,50,000

= ----- x 5

=

Rs.12,50,000

3

(2) Sales Needed For A Profit Of Rs.6,00,000

Fc + Desired Profit

Sales = -----

P/V Ratio

7,50,000 + 6,00,000

=

3/5

5

= 13,50,000 X -----

3

= Rs.22,50,000 [or]

22,50,000

=

(SP) 5

= 4,50,000 Units

(3) Profit On Sale Of 4,00,000 Units At Rs.6 Per Unit

Sales = 4,00,000 Units

= 4,00,000 X Rs.6

=

Rs.24,00,000

Sales – V. Cost = Contribution

24 Lakhs – (4 Lakhs X 2 Per Unit) = 16,00,000

C – Fc

= Profit

16,00,000 – 7,50,000 = Rs.8,50,000 [Or]

Unit Sales X Contribution Per Unit – Fc

4 Lakhs X Rs.4 = 16 Lakhs – 7,50,000 = 8,50,000

Illustration 2: (Pricing)

A company is considering a reduction in the price of its product by

10% because it is felt that such a step may lead to a greater volume of sales.

It is anticipated that there will be no change in total fixed costs or variable

costs per unit. The directors wish to maintain profit at the present level.

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You are given the following information:

Sales (15,000 Units)

Rs.3,00,000

Variable Cost

Rs.13 Per Unit

Fixed Cost

Rs.60,000

From the above information, calculate P/V ratio and the amount of sales required to maintain profit at the present level after reduction of selling price by 10%.

Solution:

$$S - V$$

$$3,00,000 - (15,000 \times 13)$$

$$\text{P/V Ratio} = \frac{\quad}{\quad}$$

$$= \frac{\quad}{\quad}$$

$$S$$

$$3,00,000$$

$$= 0.35 \text{ Or } 35\%$$

After reduction of price by 10% it will be Rs.18 (original price per unit Rs.20).

$$\text{Present profit level} = (35\% \text{ of } 3,00,000) - 60,000$$

$$=$$

$$\text{Rs.45,000}$$

P/v ratio after price reduction

$$S - V \quad 18 - 13 \quad 5$$

$$= \frac{\quad}{\quad} = \frac{\quad}{\quad} = \quad \%$$

$$S$$

$$18 \quad 18$$

To earn the same profit level

$$F + \text{Desired Profit}$$

$$= \frac{\quad}{\quad}$$

P/V Ratio

$$18$$

$$= 1,05,000 \times \frac{\quad}{\quad}$$

5

= Rs.3,78,000

Illustration 3:

From the following data, calculate the break-even point.

First

year

Second

Year

Sales

80,000

90,000

Profit

Rs.10,000

Rs.14,000

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Solution:

Fixed Costs

Bep Sales = -----

P/V Ratio

Change In Profit

P/V Ratio = ----- X 100

Change In Sales

4,000

= ----- X 100 = 40%

10,000

Fixed Cost = Contribution – Profit

40

= 80,000 X ----- – Rs.10,000

100

= 32,000 – 10,000

= 22,000

22,000 X 100

Bep Sales = ----- =

Rs.55,000

40

Illustration 4:

A company is considering expansion. Fixed costs amount to rs.4,20,000 and are expected to increase by rs.1,25,000 when plant expansion is completed. The present plant capacity is 80,000 units a year. Capacity will increase by 50 percent with the expansion. Variable costs are currently rs.6.80 per unit and are expected to go down by re.0.40 per unit with the expansion. The current selling price is rs.16 per unit and is expected to remain the same under either alternative. What are the break-even points under either alternatives? Which alternative is better and why?

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Solution:

Computation of BEP Under Two Alternatives

Items

Currently

After the expansion

Rs.

Rs.

Fixed

Costs

4,20,000

5,45,000

Capacity

80,000 Units

1,20,000 Units

Variable Cost Per Unit

6.80

6.40

Contribution Margin Per Unit

9.20

9.60

Selling Price Per Unit

16

16

4,20,000

5,45,000

BEP = -----

9.20

9.60

= 45,652 Units

= 56,771 Units

Assuming that the whole production can be sold, the profit under

The two alternatives will be:

Items

Currently

After The Expansion

Sales

12,80,000

19,20,000

- Variable Cost

5,44,000

7,68,000

Contribution

7,36,000

11,52,000

- Fixed Cost

4,20,000

5,45,000

3,16,000

6,07,000

It is obvious from the above calculations that the profits will be almost double after the expansion. Hence, the alternative of expansion is to be preferred.

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Illustration 5:

A factory engaged in manufacturing plastic buckets is working at 40% capacity and produces 10,000 buckets per annum:

Rs.

Material

10

Labour cost

3

Overheads

5 (60% fixed)

The selling price is rs.20 per bucket.

If it is decided to work the factory at 50% capacity, the selling price falls by

3%. At 90% capacity the selling price falls by 5%, accompanied by a similar fall in the prices of material.

You are required to calculate the profit at 50% and 90% capacities and also the break-even points for the same capacity productions.

Solution:

Statement showing profit and break-even point at different capacity levels:

Capacity Level

50%

90%

Production (Units)

12,500

22,500

Per Unit

Total

Per Unit

Total

Rs.

Rs.

Rs.

Rs.

(A) Sales

19.40

2,42,500

19.00

4,27,500

Variable Cost

Materials

10.00

1,25,000

9.50 2,13,750

Wages

3.00

37,500

3.00

67,500

Variable

Overhead

2.00

25,000

2.00 45,000

(B) Total Variable Cost 15.00

1,87,500

14.50 3,26,250

(C) Contribution

(S-V)

4.40

55,000

4.50 1,01,250

Or (a-b)

Less Fixed Cost

30,000

30,000

25,000

71,250

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Break-even points at

50%

at 90%

Fixed

Costs

Units = -----

Contribution Per Unit

30,000

30,000

= ----- = 6818 -----

= 6667

4.40

4.50

Sales Value = Rs.1,32,269 = Rs.1,26,667

Illustration 6:

Calculate:

₹ The amount of fixed expenses

₹ The number of units to break-even

₹ The number of units to earn a profit of rs.40,000

The selling price can be assumed as rs.10.

The company sold in two successive periods 9,000 units and 7,000

units and has incurred a loss of rs.10,000 and earned rs.10,000 as profit

respectively.

Solution:

Year

Sales

Profit/Loss

I

7,000 Units

Rs. (-)10,000

II

9,000 Units

Rs. (+)10,000

2,000

20,000

(Change)

Year

I

Year

II

(I) Contribution = 9,000Units X Rs.10

7,000Units Xrs.10

= Rs. 90,000

= Rs. 70,000

Less: Profit/Loss = Rs. -10,000

= Rs.+10,000

Fixed Cost = Rs. 80,000

= Rs. 80,000

(Contribution = Fixed Cost + Profit)

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Rs.20,000

(Ii) Contribution

= -----

= Rs.10 Per Unit

2,000 Units

FC

Rs.80,000

BEP = -----

= -----

= 8,000 Units

C

Rs.10

(Iii) The No. Of Units To Earn A Profit Of Rs.40,000

F + Desired Profit

=

C

Per

Unit

80,000 + 40,000

= -----

= 12,000 Units

10

Illustration 7:

From The Following Data Calculate:

⌘ P/V Ratio

⌘ Profit When Sales Are Rs.20,000

⌘ Net Break-Even If Selling Price Is Reduced By 20%

Fixed Expenses Rs.4,000

Break-Even Point 10,000

Solution:

Fixed Expenses

(I) Break-Even Sales = -----

P/V Ratio

Fixed Expenses

or P/V Ratio = -----

Break-Even Sales

4,000

= -----

= 40%

10,000

(II) Profit When Sales Are Rs.20,000

Profit = Sales X P/V Ratio – Fixed Expenses

= Rs.20,000 X 40% – Rs.4,000

= Rs. 8,000 – Rs.4,000

= Rs. 4,000

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(III) New Break-Even Point If Selling Price Is Reduced By 20%

If Selling Price Is Rs.100, Now It Will Be Rs.80

V. Cost Per Unit = Rs.60 (I.E., 100 – 40% Old P/V Ratio)

80 – 60

New P/V Ratio = ----- = 25%

80

4,000

Break-Even Point = ----- = Rs.16,000

25%

Illustration 8:

From the following data calculate:

⌘ Break-even point in amount of sales in rupees.

⌘ Number of units that must be sold to earn a profit of Rs.60,000

Per year.

⌘ How many units must be sold to earn a net profit of 15% of sales?

Sales Price

Rs.20 Per Unit

Variable manufacturing costs

Rs.11 per unit

Variable selling costs

Rs. 3 per unit

Fixed

factory

overheads

Rs.5,40,000

Fixed

selling

costs

Rs.2,52,000

Solution:

(I) Items

Per Unit

Total Fixed Cost

Rs.

Rs.

Sales Price

20

Factory Overheads 5,40,000

Variable Costs

Selling Costs

2,52,000

Manufacturing

11

7,92,000

Selling

3

14

--

Contribution Per Unit

6

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Fixed Costs

7,92,000

BEP = ----- = -----

Contribution Per Unit

6

=

1,32,000

Units

Total Sales = 1,32,000 X Rs.20

= 26,40,000

Fixed Cost + Desired Profit

7,92,000 + 60,000

(II) -----

= -----

Contribution per unit

6

8,52,000

=

6

=

1,42,000

units

(III) Let The No. Of Units Sold Be X.

Marginal Cost Equation:

$$= S - V$$

$$= F + P$$

$$= 20X - 14X$$

$$= F + 15\% \text{ Of Sales}$$

$$= 20 X - 14 X$$

$$= 7,92,000 + 15\% \text{ Of } 20X$$

$$= 6 X$$

$$= 7,92,000 + 3 X$$

$$= 6 X - 3 X$$

$$= 7,92,000$$

=

3

X

=

$$7,92,000$$

$$7,92,000$$

$$X =$$

No. Of Units = -----

3

=

2,64,000

2,64,000 X Rs.20 X 15

Profit = ----- =

Rs.7,92,000

100

4.2.3.3 Break-Even Chart

The break-even point can also be shown graphically through the break-even chart. The break-even chart 'shows the profitability or otherwise of an undertaking at various levels of activity and as a result indicates the point at which neither profit nor loss is made'. It shows the relationship, through a graph, between cost, volume and profit. The break-

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even point lies at the point of intersection between the total cost line and the total sales line in the chart. In order to construct the breakeven chart, the following assumptions are made:

Assumptions Of Break-Even Chart

1. Fixed costs will remain constant and do not change with the level of activity.
2. Costs are bifurcated into fixed and variable costs. Variable costs change according to the volume of production.
3. Prices of variable cost factors (wage rates, price of materials, suppliers etc.) Will remain unchanged so that variable costs are truly variable.
4. Product specifications and methods of manufacturing and selling

will not undergo a change.

5. Operating efficiency will not increase or decrease.
6. Selling price remains the same at different levels of activity.
7. Product mix will remain unchanged.
8. The number of units of sales will coincide with the units produced, and hence, there is no closing or opening stock.

4.2.3.4 Construction Of Break-Even Chart

The following steps are required to be taken while constructing the Break-even chart:

1. Sales volume is plotted on the x-axis. Sales volume can be shown in the form of rupees, units or as a percentage of capacity. A horizontal line is drawn spacing equal distances showing sales at various activity levels.
2. Y axis represents revenues, fixed and variable costs. A vertical line is also spaced in equal parts.
3. Draw the sales line from point o onwards. Cost lines may be drawn in two ways (i) fixed cost line is drawn parallel to x axis and above it variable cost line is drawn from zero point of fixed cost line. This line is called the total cost line (fig.1) (ii) in the second method the variable cost line is drawn from point o and above this, fixed cost line is depicted running parallel to the variable cost line. This line may be called total cost line. (fig.2)

4. The point at which the total cost cuts across the sales line is the

break-even point and volume at this point is break-even volume.

5. The angle of incidence is the angle between sales and the total cost line. It is formed at the intersection of the sales and the total cost line, indicating the profit earning capacity of a firm. The wider the angle the greater is the profit and vice versa. Usually, the angle of incidence and the margin of safety are considered together to show that a wider angle of incidence coupled with a high margin of safety would indicate the most suitable conditions.

Illustration 9:

from the following information, prepare a break-even chart
Showing the break-even point.

Budget output

.....

80,000 units

Fixed expenses

.....

Rs.4,00,000

Selling price per unit Rs. 20

Variable cost per unit Rs. 10

Solution:

Total costs and sales at varying levels of output:

Output

Variable

Fixed Total

Sales

(Units) Cost Rs. Cost Rs. Cost Rs. Cost Rs.

@ 10 p.u.

@ 20 p.u.

20,000

2,00,000

4,00,000 6,00,000

4,00,000

40,000

4,00,000

4,00,000 8,00,000

8,00,000

60,000

6,00,000

4,00,000

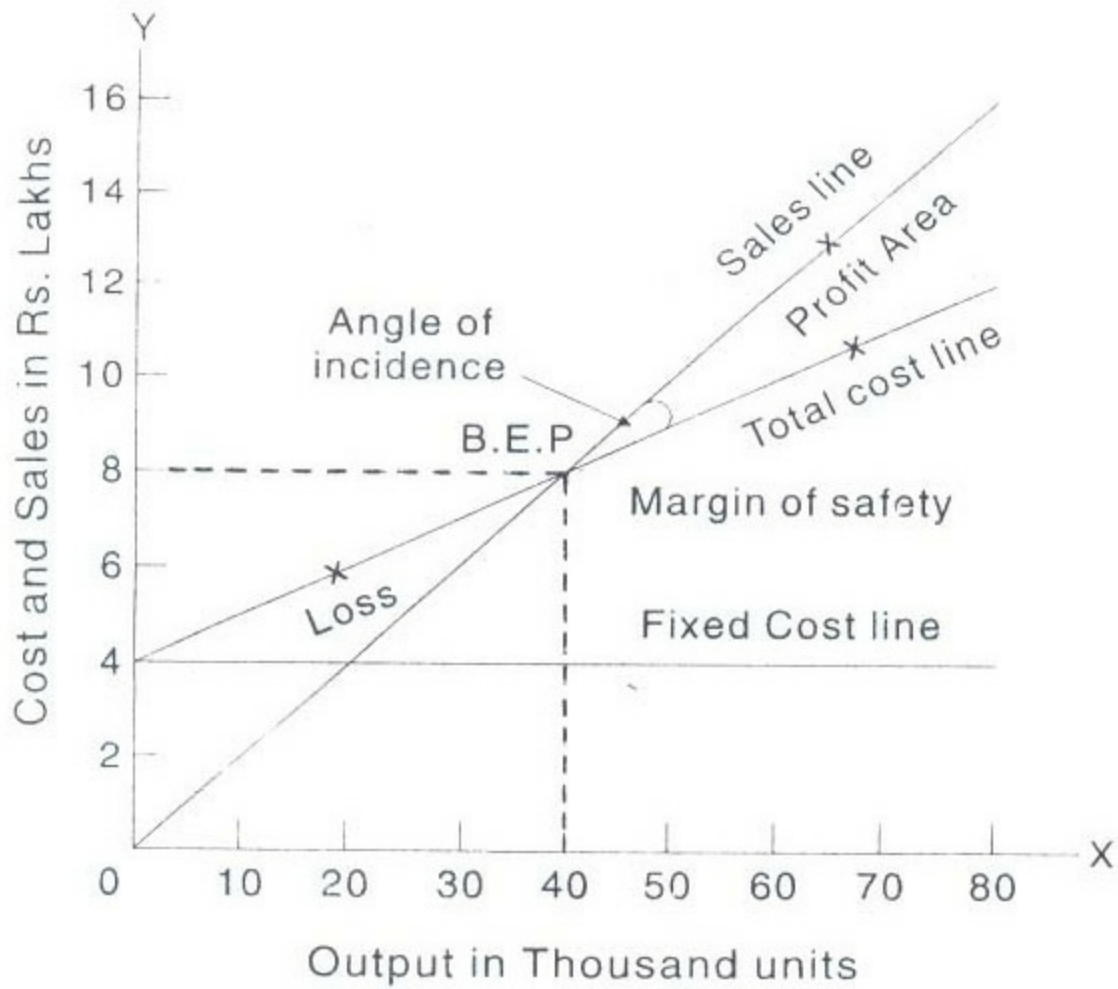
10,00,000 12,00,000

80,000

8,00,000

4,00,000

12,00,000 16,00,000



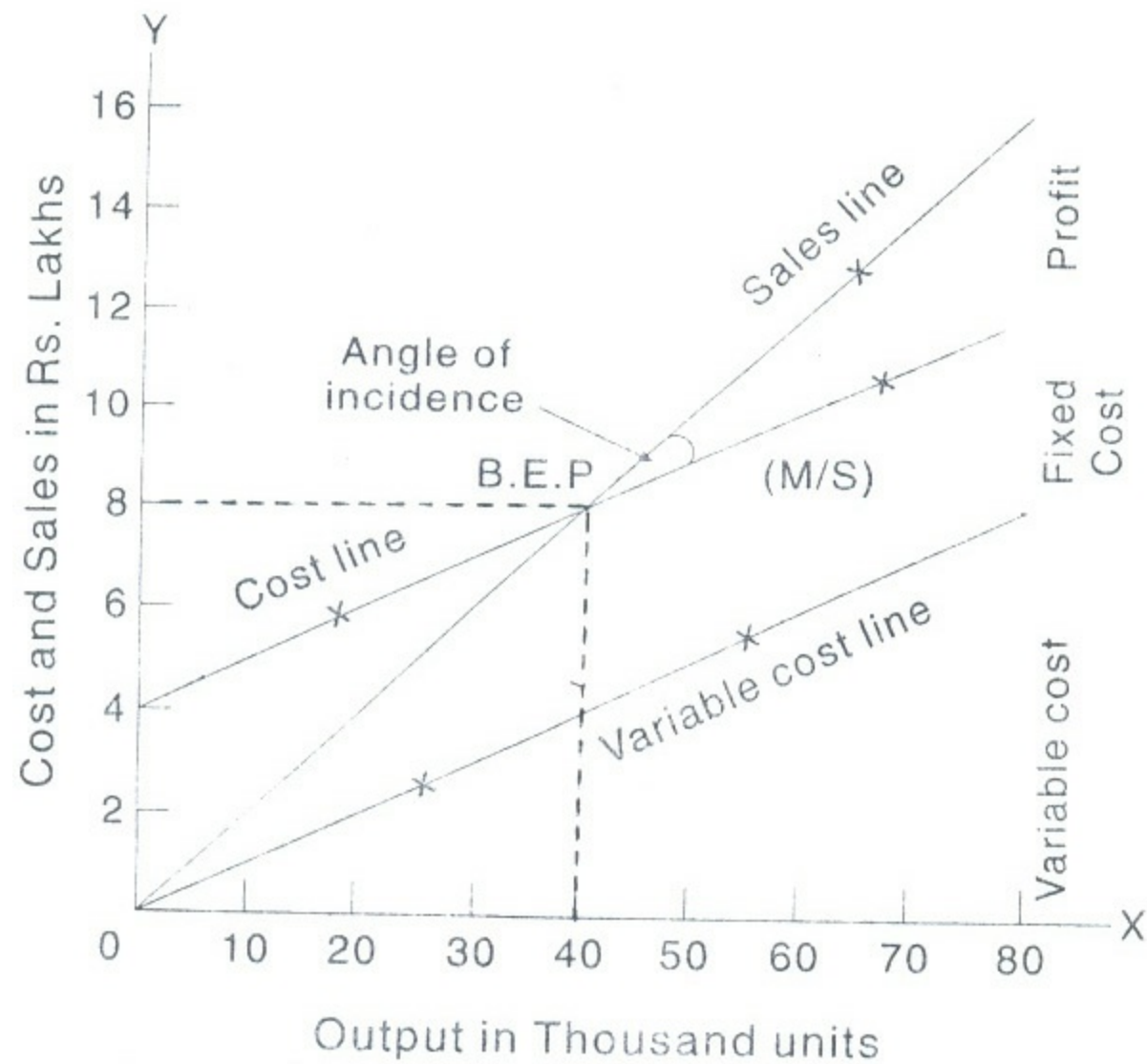


Fig. 1

fig. 2

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First Method (Fig.1)

Fixed cost line runs parallel to x-axis. Total cost line is drawn at rs.4 lakhs on y-axis and runs upward. Sales line drawn from point o.

B.E.P. is at 40,000 units, i.e., rs.8,00,000

$M/S = \text{Sales} - \text{B.E. Volume}$

$= 80,000 - 40,000$

$= 40,000 \text{ Units (I.E. Rs.8,00,000)}$

Alternative Method (Fig.2)

Variable cost line starts from point o and runs upward. Total cost

Line is drawn parallel to v.c.line from rs.4 lakhs point on y-axis. Total

Cost and sales line cut each other at 40,000 units (i.e., rs.8,00,000 sales).

This is the break-even point.

Cash Break-Even Chart

This chart is prepared to show the cash need of a concern. Fixed

expenses are to be classified as those involving cash payments and those not

involving cash payments like depreciation. As the cash break-even chart

is designed to include only actual payments and not expenses incurred,

any time lag in the payment of items included under variable costs must

be taken into account. Equal care must be shown on the period of credit

allowed to the debtors for the purpose of calculating the amount of cash to

be received from them, during a particular period.

Illustration 10:

The following information is available in respect of graphics ltd.,

ghaziabad, for the budget period.

Sales 10,000 units at rs.10 per unit.

Variable costs rs.4 per unit.

Fixed costs rs.25,000 including depreciation of rs.5,000

Preference dividend to be paid rs.5,000

Taxes to be paid rs.5,000

It may be assumed that there are no lags in payment. Prepare a cash

break-even chart.

Fig.3.**4.2.3.5 Profit Volume Graph**

This graph (called profit graph) gives a pictorial representation

of cost-volume profit relationship. In this graph x axis represents sales.

However, the sales line bisects the graph horizontally to form two areas.

The ordinate above the zero sales line, shows the profit area, and the

ordinate below the zero sales line indicates the loss or the fixed cost area.

The profit-volume-ratio line is drawn from the fixed cost point through

the break-even point to the point of maximum profit. In order to construct

this graph, therefore, data on profit at a given level of activity, the break-

even point and the fixed costs are required.

Illustration 11:

Draw the profit volume graph and find out p/v ratio with the

following information:

Output 3,000 units

Volume of sales rs.7,500

Variable cost rs.1,500

Fixed cost

rs.1,500

Solution:

In the above graph, the profit is rs.1,500. The fixed cost is rs.1,500. Pq

represents sales line at point positive, which is the break even point i.e.,

rs.3,750. The p/v ratio can easily be found out with the help of this graph

as follows:

F X S

1,500 X 7,500

Sales At B.E.P. = ----- = ----- Rs.3,750

S – V

7,500 – 4,500

Margin Of Safety = 7,500 – 3,750

= 3,750

S – V

7,500 – 4,500

P/V Ratio = ----- = -----

S

7,500

2

= --- or 0.4 or 40%

5

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(use fig.4)

4.2.3.6 Advantages And Limitations Of Break-Even Analysis

The break-even analysis is a simple tool employed to graphically represent accounting data. The data revealed by financial statements and reports are difficult to understand and interpret. But when the same are presented through break-even charts, it becomes easy to understand them.

Break-even charts help in:

1. Determining total cost, variable cost and fixed cost at a given level of activity.
2. Finding out break-even output or sales.
3. Understanding the cost, volume, profit relationship.
4. Making inter-firm comparisons.
5. Forecasting profits.
6. Selecting the best product mix.
7. Enforcing cost control.

On the negative side, break-even analysis suffers from the following limitations:

1. It is very difficult if not impossible to segregate costs into fixed and variable components. Further, fixed costs do not always remain constant. They have a tendency to rise to some extent after production reaches a certain level. Likewise, variable costs do not always vary proportionately. Another false assumption is regarding the sales revenue, which does not always change proportionately. As we all know selling prices are often lowered down with increased production in an attempt to boost up sales revenue. The break even analysis also does not take into account the changes in the stock position (it is assumed, erroneously though, that stock changes do not affect the income) and the conditions of growth and expansion in an organisation.
2. The application of break-even analysis to a multiproduct firm is very difficult. A lot of complicated calculations are involved.
3. The break-even point has only limited importance. At best it

would help management to indulge in cost reduction in times of dull business. Normally, it is not the objective of business to break-even, because no business is carried on in order to break-even. Further the term

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bep indicates precision or mathematical accuracy of the point. However, in actual practice, the precise break-even volume cannot be determined and it can only be in the nature of a rough estimate. Therefore, critics have pointed out that the term 'break-even area' should be used in place of bep.

4. Break-even analysis is a short-run concept, and it has a limited application in the long range planning.

Despite these limitations, break-even analysis has some practical utility in that it helps management in profit planning. According to Wheldon, 'if the limitations are accepted, and the chart is considered as being an instantaneous photograph of the present position and possible trends, there are some very important conclusions to be drawn from such a chart'.

Summary

Cost-volume-profit analysis is a technique of analysis to study the effects of cost and volume variations on profit. It determines the probable profit at any level of activity. It helps in profit planning, preparation of flexible budgets, fixation of selling prices for products, etc.

The break-even point is generally depicted through the break-even chart. The chart shows the profitability of an undertaking at various levels of activity. It brings out the relationship between cost, volume and profit clearly. On the negative side, the limitations of break-even analysis

are: difficulty in segregating costs into fixed and variable components, difficulty in applying the technique to multi-product firms, short-term orientation of the concept etc.

Key Words

Cost-volume-profit analysis: it is that system of analysis which determines the probable profit at any level of activity.

Profit planning: estimating the profit as accurately as possible.

Pricing: fixing prices for products.

Break-even chart: it is that chart which shows the bep graphically.

Cash break-even chart: this chart shows the cash need of a concern.

Profit-volume graph: this chart gives a pictorial representation of cost volume- profit analysis.

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4.2.3.9 Self Assessment Questions

1. What is meant by cost-volume-profit analysis? Explain its application in managerial decision making.
2. How would you construct a break-even chart?
3. Make an evaluation of break-even analysis.
4. You are given the following data for the year 1989 of x company.

Rs.

%

Variable costs

6,00,000

60

Fixed costs

3,00,000

30

Net profit

1,00,000

10

Total sales

10,00,000

100

Find out

(A) Break-Even Point

(A) P/V Ratio, And

(B) Margin Of Safety Ratio

Also draw a break-even chart indicating contribution.

A firm is selling x product, whose variable cost per unit is

rs.10 and fixed cost is rs.6,000. It has sold 1,000 articles during one

month at rs.20 per unit. Market research shows that there would be a

great demand for the product if the price can be reduced. If the price can

be reduced to rs.12.50 per unit, it is expected that 5,000 articles can be

sold in the expanded market. The firm has to take a decision whether to

produce and sell 1,000 units at the rate of rs.20 or to produce and sell for the growing demand of 5,000 units at the rate of rs.12.50. Give your advice to the management in taking decision.

A publishing firm sells a popular novel at rs.15 each. At current sales of 20,000 books, the firm breaks even. It is estimated that if the author's royalties were reduced, the variable cost would drop by rs.1.00 to rs.7.00 per book. Assume that the royalties were reduced by rs.1.00, that the price of the book is reduced to rs.12 and that this price reduction increases sales from 20,000 to 30,000 books. What are the publisher's profits, assuming that fixed costs do not change?

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An analysis of a manufacturing co. Led to the following information:

Variable Cost

Fixed Cost

Cost Element

(% Of Sales)

Rs.

Direct Material

32.8

Direct Labour

28.4

Factory Overheads

12.6

1,89,900

Distribution Overheads

4.1

58,400

General Administration Overheads 1.1

66,700

Budgeted Sales Rs.18,50,000

You are required to determine:

- (a) the break-even sales volume
- (b) the profit at the budgeted sales volume
- (c) the profit if actual sales
 - (i) drop by 80%
 - (ii) increase by 5% from budgeted sales.

4.2.3.10 Key To Self Assessment Questions

(for problems only)

Q.No.4:

(A) Rs.7,50,000; (B) 40%; (C) 25%

Q.No.5:

The Proposal Is Profitable

Q.No.6:

Rs.10,000

Q.No.7:

(A) Rs.15,000; (B) Rs.73,000; (C) (I) Rs.34,650; (Ii) Rs.9,925

4.2.3.11 Case Analysis

The directors of anandam ltd. Provide you the following data relating to

the cycle chain manufactured by them:

Rs.

Sales 4,000 units @rs.50 each

2,00,000

Production cost details:

Rs.

Materials consumed 80,000

Labour cost

40,000

Variable overheads

20,000

Fixed overheads

30,000

1,70,000

Profit

30,000

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They require you to answer their following queries:

(i) the number of units by selling which the company will be

At break-even.

(ii) the sales needed to earn a profit of 20% on sales.

(iii) the extra units which would be sold to obtain the present

Profit if it is proposed to reduce the selling price by 20%

Solution:

(i)

Break Even Units:

Fixed Cost Rs.30,000

----- = ----- = 2000 Units

Contribution Per Unit Rs.15

(ii) Sales To Earn 20% On Sales

Let the units to be sold to earn 20% be x. Therefore sales will be 50x and profit is 20% of 50x i.e. 10x.

Now The Total Sales Should Be Fixed Cost + Variable Cost + Profit

Is

$$50x = 30000 + 35x + 10x$$

$$5x = 30000$$

$$x = 6000 \text{ units}$$

Therefore sales required is 6000 units x Rs.50 = Rs.3,00,000

(iii) extra units to be sold if selling price is reduced by 20%.

Present Selling Price

Rs.50

Less

20%

Rs.10

New Selling Price

Rs.40

Less Variable Cost

Rs.35

Contribution

Rs.

5

Fixed Cost + Target Profit

Units To Be Sold = -----

Contribution

30,000 + 30,000

= -----

= 12000 Units

5

Extra Units To Be Sold = 12000 – 4000

= 8000 Units

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CHAPTER V: Cost Estimation And Control

Lesson – 5.1 Cost Accounting

5.1.1 Introduction

Accounting can no longer be considered a mere language of business. The need for maintaining the financial chastity of business operations, ensuring the reliability of recorded experience resulting from these operations and conducting a frank appraisal of such experiences has made accounting a prime activity along with such other activities as marketing, production and finance. Accounting may be broadly classified into two categories – accounting which is meant to serve all parties external to the operating responsibility of the firms and the accounting, which is designed to serve internal parties to take care of the operational needs of the firm. The first category, which is conventionally referred to as “financial accounting”, looks to the interest of those who have primarily a financial stake in the organisation’s affairs – creditors, investors, employees etc. On the other hand, the second category of accounting is primarily concerned with providing information relating to the conduct of the various aspects of a business like cost or profit associated with some portions of business operations to the internal parties viz., management. This category of accounting is divided into “management accounting” and “cost accounting”. This section deals with cost accounting.

5.1.2

understand the different dimensions of cost accounting.

distinguish cost accounting from financial accounting.

appreciate the utility of cost accounting.

apply the various bases of classification of costs.

prepare a cost sheet or tender or quotations.

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5.1.3 Contents

5.1.3.1 Meaning Of Cost Accounting

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Accounting

5.1.3.3 Utility Of Cost Accounting

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5.1.3.1 Meaning Of Cost Accounting

Cost accounting developed as an advanced phase of accounting

science and is trying to make up the deficiencies of financial accounts. It

is essentially a creation of the twentieth century. Cost accounting accounts

for the costs of a product, a service or an operation. It is concerned with

actual costs incurred and the estimation of future costs. Cost accounting is a conscious and rational procedure used by accountants for accumulating costs and relating such costs to specific products or departments for effective management action. Cost accounting through its marginal costing technique helps the management in profit planning and through its another technique i.e. Standard costing facilitates cost control. In short, cost accounting is a management information system which analyses past, present and future data to provide the basis for managerial decision making.

5.1.3.2 Distinction Between Financial Accounting And Cost Accounting

Though there is much common ground between financial accounting and cost accounting and though in fact cost accounting is an outgrowth of financial accounting yet the emphasis differs. Firstly financial accounting

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is more attached with reporting the results of business to persons other than internal management – government, creditors, investors, researchers, etc. Cost accounting is an internal reporting system for an organisation's own management for decision making. Secondly financial accounting data is historical in nature and its periodicity of reporting is much wider. Cost accounting is more concerned with short-term planning and its reporting period much lesser than financial accounting. It not only deals with historic data but also is futuristic in approach. Thirdly, in financial accounting the major emphasis in cost classification is based on the type of transaction e.g.

Salaries, repairs, insurance, stores, etc. But in cost accounting the major emphasis is on functions, activities, products, processes and on internal planning and control and information needs of the organisation.

5.1.3.3 Utility Of Cost Accounting

A properly installed cost accounting system will help the management in the following ways:

- the analysis of profitability of individual products, services or jobs.
- the analysis of profitability of different departments or operations.
- it locates differences between actual results and expected results.
- it will assist in setting the prices so as to cover costs and generate an acceptable level of profit.
- cost accounting data generally serves as a base to which the tools and techniques of management accounting can be applied to make it more purposeful and management oriented.
- the effect on profits of increase or decrease in output or shutdown of a product line or department can be analysed by adoption of efficient cost accounting system.

5.1.3.4 Distinction Between Costing And Cost Accounting

Costing is the technique and process of ascertaining costs. It tries to find out the cost of doing something, i.e., the cost of manufacturing an article, rendering a service, or performing a function. **Cost accounting** is a broader term, in that it tries to determine the costs through a formal system of accounting (unlike costing which can be performed even through informal means). Stated precisely, cost accounting is a formal mechanism

by means of which costs of products and services are ascertained and controlled. The institute of cost and management accountants, u.k. define

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cost accounting as: the application of accounting and costing principles, methods and techniques in the ascertainment of costs and the analysis of savings and/or excesses as compared with previous experience or with standards. It, thus, includes three things:

⌘ Cost Ascertainment: finding out the specific and precise total and unit costs of products and services.

⌘ Cost Presentation: reporting cost data to various levels of management with a view to facilitate decision making.

⌘ Cost Control: this consists of estimating costs for production and activities for the future, and keeping them within proper limits.

Budgets and standards are employed for this purpose.

Cost accounting also aims at cost reduction, i.e., achieving a permanent and real reduction in cost by improving the standards. Cost accountancy is a comprehensive term that implies the application of costing and cost accounting principles, methods and techniques to the science, art and practice of cost control'. It seeks to control costs and ascertain the profitability of business operations.

5.1.3.5 Classification Of Cost

In the process of cost accounting, costs are arranged and rearranged in various classifications. The term 'classification' refers to the process of Grouping costs according to their common characteristics. The different

bases of cost classification are:

1. By nature or elements (materials, labour and overheads)
2. By time (historical, pre-determined)
3. By traceability to the product (direct, indirect)
4. By association with the product (product, period)
5. By changes in activity or volume (fixed, variable, semi-variable)
6. By function (manufacturing, administrative, selling, research and development, pre-production)
7. By relationship with the accounting period (capital, revenue)
8. By controllability (controllable, non-controllable)
9. By analytical/decision-making purpose (opportunity, sunk, differential, joint, common, imputed, out-of-pocket, marginal, uniform, replacement)
10. By other reasons (conversion, traceable, normal, avoidable, unavoidable, total)

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1. Elements Of Cost

The elements of costs are the essential part of the cost. There are broadly three elements of cost, as explained below:

(A) Material

The substance from which the produce is made is called material.

It can be direct as well as indirect.

I) Direct Material: it refers to those materials which become an integral part of the final product and can be easily traceable to specific physical

units. Direct materials, thus, include:

1. All materials specifically purchased for a particular job or process.
2. Components purchased or produced.
3. Primary packing materials (e.g., carton, wrapping, card-board boxes etc.).
4. Material passing from one process to another.

Ii) Indirect Material: all materials which are used for purpose ancillary to the business and which cannot conveniently be assigned to specific physical units are known as indirect materials'. Oil, grease, consumable stores, printing and stationery material etc. Are a few examples of indirect materials.

(b) Labour

In order to convert materials into finished products, human effort is required. Such human effort is known as labour. Labour can be direct as well as indirect.

I) Direct Labour:

It is defined as the wages paid to workers who are engaged in the production process and whose time can be conveniently and economically traceable to specific physical units. When a concern does not produce but instead renders a service, the term direct labour or wages refers to the cost of wages paid to those who directly carry out the service, e.g., wages paid to driver, conductor etc. Of a bus in transport service.

Ii) Indirect Labour:

Labour employed for the purpose of carrying out tasks

Incidental to goods produced or services provided is called indirect labour or indirect wages. In short, wages which cannot be directly identified with a job, process or operation, are generally treated as indirect wages. Examples of indirect labour are: wages of store-keepers, foremen, supervisors, inspectors, internal transport men etc.

(C) Expenses

Expenses may be direct or indirect.

I) Direct Expenses:

These are expenses which can be directly, conveniently and wholly identifiable with a job, process or operation. Direct expenses are also known as chargeable expenses or productive expenses. Examples of such expenses are: cost of special layout, design or drawings, hire of special machinery required for a particular contract, maintenance cost of special tools needed for a contract job, etc.

Ii) Indirect Expenses:

Expenses which cannot be charged to production directly and which are neither indirect materials nor indirect wages are known as indirect expenses. Examples are rent, rates and taxes, insurance, depreciation, repairs and maintenance, power, lighting and heating etc.

The above elements of cost may be shown by means of a chart:

Element of cost

materials

labour expenses

Direct

indirect direct

indirect direct

indirect

1. Overheads

The term overheads includes, indirect material, indirect labour and indirect expenses, explained in the preceding paragraphs. Overheads may be incurred in the factory, office or selling and distribution departments/divisions in an undertaking. Thus overheads may be of three types: factory

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overheads, office and administrative overheads and selling and distribution overheads. This classification of overheads may be shown thus:

Classification Of Overheads

Overheads

Factory office selling and distribution

Indirect indirect indirect indirect indirect indirect indirect indir

Material labour exp mat lab. Exp. Mat. Lab exp

2. Cost Classification By Time

On the basis of the time of computing costs, they can be classified

Into historical and pre-determined costs.

I) Historical Costs:

These costs are computed after they are incurred. Such costs are available only after the production of a particular thing is over.

Ii) Pre-Determined Costs:

These costs are computed in advance of production on the basis of a specification of all factors influencing cost. Such costs may be:

1.

Estimated costs: estimated costs are based on a lot of guess work. They try to ascertain what the costs will be based on certain factors. They are less accurate as only past experience is taken into account primarily, while computing them.

2.

Standard costs: standard costs is a pre-determined cost based on a technical estimate for material, labour and other expenses for a selected period of time and for a prescribed set of working conditions. It is more scientific in nature and the object is to find out what the costs should be.

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3. Cost Classification By Traceability

As explained previously, costs which can be easily traceable to a product are called direct costs. Indirect costs cannot be traced to a product or activity. They are common to several products (e.g., salary of a factory manager, supervisor etc.) And they have to be apportioned to different products on some suitable basis. Indirect costs are also called 'overheads'.

4. Cost Classification By Association With Product

Costs can also be classified (on the basis of their association with products) as product costs and period costs.

1. **Product Costs:** product costs are traceable to the product and include direct material, direct labour and manufacturing overheads. In other words, product cost is equivalent to factory cost.

2. **Period Costs:** period costs are charged to the period in which they are incurred and are treated as expenses. They are incurred on the basis of time, e.g., rent, salaries, insurance etc. They cannot be directly assigned to a product, as they are incurred for several products at a time (generally).

5. Cost Classification By Activity/Volume

Costs are also classified into fixed, variable and semi-variable on the basis of variability of cost in the volume of production.

1. *Fixed Cost:*

Fixed cost is a cost which tends to be unaffected by variations in volume of output. Fixed cost mainly depends on the passage of time and does not vary directly with the volume of output. It is also called period cost, e.g., rent, insurance, depreciation of buildings etc. It must be noted here that fixed costs remain fixed upto a certain level only. These costs may also vary after a certain production level.

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2. *Semi-Variable Cost:*

These costs are partly fixed and partly variable. Because of the variable element, they fluctuate with volume and because of the fixed element, they do not change in direct proportion to output. Semi-variable or semi-fixed costs change in the same direction as that of the output but

not in the same proportion. For example, the expenditure on maintenance is to a great extent fixed if the output does not change significantly. Where, however, the production rises beyond a certain limit, further expenditure on maintenance will be necessary although the increase in the expenditure will not be in proportion to the rise in output. Other examples in this regard are: depreciation, telephone rent, repairs etc.

3. *Variable Cost:*

Cost which tends to vary directly with volume of outputs is called 'variable cost'. It is a direct cost. It includes direct material, direct labour, direct expenses etc. It should be noted here that the variable cost per unit is constant but the total cost changes corresponding to the levels of output. It is always expressed in terms of units, not in terms of time.

6. Cost Classification By Function

On the basis of the functions carried out in a manufacturing concern,

Costs can be classified into four categories:

1. **Manufacturing/Production Cost:** it is the cost of operating the manufacturing division of an enterprise. It is defined as the cost of the sequence of operations which begin with supplying materials, services and ends with the primary packing of the product.

2. **Administrative/Office Cost:** it is the cost of formulating the policy, directing the organisation and controlling the operations of an undertaking, which is not directly related to production, selling, distribution, research or development. Administration cost, thus, includes all office expenses: remuneration paid to managers, directors, legal expenses, depreciation of

office premises etc.

3. Selling Cost: selling cost is the cost of seeking to create and stimulate demand e.g., advertisements, show room expenses, sales

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promotion expenses, discounts to distributors, free repair and servicing expenses, etc.

4. Distribution Cost: it is the cost of the sequence of operations which begins with making the packed product, available for despatch and ends with making the reconditioned returned empty package, if any, available for re-use. Thus, distribution cost includes all those expenses concerned with despatching and delivering finished products to customers, e.g., warehouse rent, depreciation of delivery vehicles, special packing, loading expenses, carriage outward, salaries of despatch clerks, repairing of empties for re-use, etc.

5. Research And Development Cost: it is the cost of discovering new ideas, processes, products by experiment and implementing such results on a commercial basis.

6. Pre-Production Cost: expenses incurred before a factory is started and expenses involved in introducing a new product are preproduction costs. They are treated as deferred revenue expenditure and charged to the cost of future production on some suitable basis.

7. Cost Classification By Relationship With Accounting Period

On the basis of controllability, costs can be classified as controllable or uncontrollable.

1. Controllable Cost: a cost which can be influenced by the action of a specified member of an undertaking is a controllable cost, e.g., direct materials, direct labour etc.

2. Uncontrollable Cost: a cost which cannot be influenced by the action of a specified member of an undertaking is an uncontrollable cost, e.g., rent, rates, taxes, salary, insurance etc.

The term controllable cost is often used in relation to variable cost and the term uncontrollable cost in relation to fixed cost. It should be noted here that a controllable cost can be controlled by a person at a given organisation level only. Sometimes two or more individuals may be involved in controlling such a cost.

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8. Cost Classification By Decision-Making Purpose

Costs may be classified on the basis of decision-making purposes for which they are put to use, in the following ways:

1. Opportunity Cost: it is the value of the benefit sacrificed in favour of choosing a particular alternative or action. It is the cost of the best alternative foregone. If an owned building, for example, is proposed to be used for a new project, the likely revenue which the building could fetch, when rented out, is the opportunity cost which should be considered while evaluating the profitability of the project.

2. Sunk Cost: a cost which was incurred or sunk in the past and is not relevant for decision-making is a sunk cost. It is only historical in nature and is irrelevant for decision-making. It may also be defined as the

difference between the purchase price of an asset and its salvage value.

3. Differential Cost: the difference in total costs between two alternatives is called as differential cost. In case the choice of an alternative results in increase in total cost, such increase in costs is called 'incremental cost'. If the choice results in decrease in total costs, the resulting decrease is known as decremental cost.

4. Joint Cost: whenever two or more products are produced out of one and the same raw material or process, the cost of material purchased and the processing are called joint costs. Technically speaking, joint cost is that cost which is common to the processing of joint products or by-products upto the point of split-off or separation.

5. Common Cost: common cost is a cost which is incurred for more than one product, job territory or any other specific costing object. It cannot be treated to individual products and, hence, apportioned on some suitable basis.

6. Imputed Cost: this type of cost is neither spent nor recorded in the books of account. These costs are not actually incurred (hence known as hypothetical or notional costs) but are considered while making a decision. For example, in accounting, interest and rent are recognized only as expenditure when they are actually paid. But in costing, they are charged on a notional basis while ascertaining the cost of a product.

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7. Out-Of-Pocket Cost: it is the cost which involves current or future expenditure outlay, based on managerial decisions. For example

a company has its own trucks for transporting goods from one place to another. It seeks to replace these by employing public carriers of goods. While making this decision, management can ignore depreciation, but not the out-of-pocket costs in the present situation, i.e., fuel, salary to drivers and maintenance paid in cash.

8. Marginal Cost: it is the aggregate of variable costs, i.e., prime cost plus variable overheads.

9. Replacement Cost: it is the cost of replacing a material or asset in the current market.

5.1.3.6 Cost Sheet

Cost sheet is a statement presenting the items entering into cost of products or services. It shows the total cost components by stages and cost per unit of output during a period. It is usually prepared to meet three objectives: to provide the classification of costs in a summarised form, to prepare estimates of costs for future use and to facilitate a comparative study of costs with previous cost sheets to know the cost trends.

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The layout of a typical cost sheet is provided below:

Specimen cost sheet

Particulars

Total cost Cost per Unit

Direct materials

opening stock of materials

add purchases of materials

less closing stock of materials

(a) materials consumed

Direct wages

Direct expenses

Prime cost

Add Factory Overheads

Factory Rent, Rates, Taxes

Fuel-Power And Water

Lighting And Heating

Indirect Wages

Salaries Of Works Manager Etc.

Indirect Materials

Drawing Office And Works Office Expenses

Depreciation On Factory Land And

Building

Less Scrap Value

Defective Work

Add Work In Progress (Opening)

Less Work In Progress (Closing)

Works cost

Add Office/Administration Overheads

Office Rent, Insurance, Lighting, Cleaning

Office Salaries, Telephone, Law And

Audit Expenses

General Manager's Salary

Printing And Stationery

Maintenance, Repairs, Upkeep Of Office

bldg

bank charges and miscellaneous expenses

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Cost Of Production

Add opening stock of finished goods

Less closing stock of finished goods

Cost of goods sold

Add selling and distribution overheads

showroom expenses, salesmen's salaries

& commission, bad debts, discounts,

warehouse rent, carriage outwards,

advertising, delivery expenses, samples and

free gifts etc.

ost of sales

add net profit or deduct net loss:

Sales

Treatment of certain items in the cost sheet:

(a)

Computation Of Profit: profit may be calculated either as a

Percentage of cost or selling price.

Example:

profit as a percentage of cost:

Factory

cost

5,700

Administration overhead

600

Total

cost

6,300

Profit 10% on cost

630

Selling

price

6,930

percent

So profit

= cost -----

100

Example: Profit as a percentage of selling price. Here the percentage is on

Selling price. Selling price includes Cost + Profit.

Sales price = 100

Less profit = 10

Cost price = 90

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This profit of rs.10 is on rs.90 which is the cost price. So it is 1/9th of cost price. In the above example,

Total cost = 6,300

Profit on 10% on SP = 700

Selling price

7,000

Cost

x

percent

So sale price = -----

100

—

percent

6,300

x

100

= -----
100 - 10

= 7,000

(b) Treatment Of Stock: the term 'stock' includes three items: raw materials, work in progress and finished goods. The value of raw materials is arrived at in the following manner:

Opening stock of raw material

Add purchases

Add expenses involved in the purchases of raw material

Less closing stock of raw materials

Work-in-progress represents the quantity of semi-finished goods at the time of the preparation of the cost sheet. It represents cost of materials, labour and manufacturing expenses to-date. Work-in-progress may be shown in the cost sheet either immediately after the prime cost or after the calculation of the factory overheads, as shown in the specimen cost sheet. Finally, in respect of stock of finished goods, adjustments have to be made where opening and closing stock of finished goods are given. This is done, as shown in the specimen cost sheet, by adding opening stock of finished goods to the cost of production arrived at on the basis of current figures and reducing the closing stock of finished goods from this total.

Let's explore these aspects more clearly through the following illustrations:

Tenders And Quotations:

While preparing tenders or quotations, manufacturers or contractors have to look into the figures pertaining to the previous year as

shown in the cost sheet for that period. These figures have to be suitably

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modified in the light of changes expected in the prices of materials, labour, etc., and submit the tender or quotation accordingly.

5.3.6 Illustrations

Illustration 1:

Prepare the cost sheet to show the total cost of production and cost per unit of goods manufactured by a company for the month of July 2012.

Also find out the cost of sales.

Stock of raw materials 1-7-2012

3,000

Raw materials purchased

28,000

Stock of raw materials 31-7-2012

4,500

Manufacturing wages

7,000

Depreciation of plant

1,500

Loss on sale of a part of plant

300

Factory rent and rates

3,000

Office rent

500

General expenses

400

Discount on sales

300

Advertisement expenses to be fully charged

600

Income-tax paid

2,000

The number of units produced during july, 2012 was 3,000.

The stock of finished goods was 200 and 400 units on 1-7-2012 and

31-7-202 respectively. The total cost of units on hand on 1-7-2012 was

Rs.2,800. All these have been sold during the month.

Output 3,000 units.

Cost sheet for the year ended 31-7-2012

Particulars

Total Cost Per Unitcost

Rs.

Rs.

Raw materials consumed

Opening stock

3,000

Add purchases

28,000

31,000

Less closing stock

4,500 26,500

8.83

254

Direct wages

7,000

2.33

Prime cost

33,500

11.16

Factory overheads:

Depreciation

1,500

Factory rent

3,000

4,500

1.50

Factory cost

38,000

12.66

Office and administrative

Overheads:

Office rent

500

General expenses

400

900

0.30

Cost of production

38,900

12.96

Statement of cost of sales

Cost of production

38,900

Add: opening stock of

Finished goods

2,800

41,700

Less: closing stock of finished

Goods (400 x rs.12.96)

5,184

Cost of production of goods sold

36,516

Add: selling and distribution overhead:

Discount on sales

300

Advertisement expenses

600

900

Cost of sales

37,416

Illustration 2:

From the following particulars, prepare a cost sheet for the year ending 31-12-2011.

Opening stock of raw materials (1-1-2011)

50,000

Purchases

of

raw

materials

1,60,000

Closing stock of raw materials (31-12-2011)

80,000

255

Wages

—

productive

1,50,000

general

20,000

Chargeable expenses

40,000

Rent, rates and taxes – factory

10,000

Rent, rates and taxes – office

1,000

Depreciation on plant and machinery

3,000

Salary – office

5,000

Salary – travellers

4,000

Printing and stationery

1,000

Office cleaning and lighting

800

Repairs and renewals (factory)

6,400

Other factory expenses

5,000

Management expenses (including managing

Director's

fees)

24,000

Travelling expenses of salesmen

2,200

Showroom expenses and samples

2,000

Carriage and freight – outwards

2,000

Carriage and freight – inwards

9,000

Octroi on purchases

1,000

Advertisement

30,000

Sales

4,60,000

Management expenses should be allocated in the ratio of 2:1:3 on factory,

office and sales departments.

Solution:

Statement of cost and profit for 2011

Rupees Rupees

Materials consumed

Opening stock

50,000

Add

purchases

1,60,000

Add carriages freight inwards

9,000

Add octroi on purchases

1,000

2,20,000

Less closing stock

80,000

Cost

of

materials

used

1,40,000

Productive

wages

1,50,000

Chargeable

expenses

40,000

Prime cost

3,30,000

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Factory expenses

General wages

20,000

Rent, rates and taxes

10,000

Depreciation on plant and

Machinery

3,000

Repairs and renewals

6,400

Other factory expenses

5,000

Management expenses: $\frac{1}{6}$ of Rs.24,000 8,000

52,400

Factory cost 3,82,400

Administrative expenses

Rent, rates and taxes

1,000

Salary

5,000

Printing and stationery

1,000

Cleaning and lighting

800

Management expenses: 1/6

of Rs.24,000

4,000

11,800

Cost of production

3,94,200

Selling and distribution expenses

Advertising

4,000

Show-room expenses and samples 2,000

Traveller's salary

4,000

Salesmen's travelling expense

2,200

Carriage outwards and freight

2,000

Management expenses: 3/6 of

Rs.24,000

12,000

26,200

Cost of sales

4,20,400

Sales

4,60,000

Profit

39,600

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Illustration 3:

the following particulars relate to a company for a period of

Three months:

Raw

materials

(1-1-2012)

55,000

Raw

materials

(31-3-2012)

35,000

Factory

wages

80,000

Materials purchased

60,000

Sales

1,54,000

Indirect

expenses

10,000

Stock of finished goods (1-1-2012)

NIL

Stock of finished goods (31-3-2012)

30,000

No. Of units produced during the period was 2,000.

Prepare a statement of cost for the period and compute the price to be quoted for 500 units in order to realise the same profit as for the period under review, assuming no alternation in wages and cost of materials.

Solution:

Statement of cost for the period ending 31-3-2012

Output 2,000 Units

Particulars

Amount

Rs.

Rs.

Opening stock of raw materials

55,000

Add:

purchases

60,000

1,15,000

Less: closing stock of raw materials

35,000

Raw materials consumed

80,000

Factory

wages

80,000

Prime

cost

1,60,000

Indirect

expenses

10,000

Cost
of
production

1,70,000

Less: closing stock of finished goods

30,000

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Cost of goods sold

1,40,000

14,000 x 100

Profit (-----) = 10% of cost

1,40,000

14,000

Sales

1,54,000

Tender statement showing quotations for 500 units

Particulars

Amount

Rupees

80,000 x 500

Materials consumed (-----)

2,000

20,000

80,000 x 500

Wages

(-----)

20,000

2,000

Prime

cost

40,000

10,000 x 500

Add: indirect expenses (-----) 2,500

2,000

Cost

of

production

42,500

Add: profit (10% of cost of production)

4,250

Price

to

be

quoted

46,750

Illustration 4: The following information has been taken from a factory:

Rupees

Materials

50,000

Direct

wages

40,000

Factory

overheads

30,000

Administration

overheads

20,000

You are required to fix the selling price of a machine costing rs.4,200 in materials and rs.3,000 in wages so that it yields a profit of 25% on selling price.

Solution:

Statement of cost

Rupees

Materials

50,000

Direct

wages

40,000

Prime

cost

90,000

Factory

overheads

30,000

Works cost

1,20,000

Administration overheads

20,000

Cost of production

1,40,000

Percentage of factory overheads to direct wages:

30,000

----- x 100 = 75%

40,000

Percentage of office overheads to works cost:

20,000

----- x 100 = 16.67%

1,20,000

Tender

or

quotation

Rupees

Materials

4,200

Wages

3,000

Prime cost

7,200

Factory overheads - 75% of wages

2,250

Works cost

9,450

Administration overheads – 16.67% on

Works cost

1,575

Cost

of

production

11,025

Profit 25% on selling price or

33

1/3

33 1/3% on cost 11,025 x ----- 3,675

100

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Estimated

selling

price

14,700

5.1.3.8 Summary

Traditional accounting or financial accounting can no longer serve the purposes of all concerned. Especially the internal organs of the business concerns, namely managements, want a lot of analytical information which could not be provided by the financial accounting. Hence to serve the needs of management two more kinds of accounts – management accounting and cost accounting have evolved. Simply stated, management accounting serves the needs of management and cost accounting tries to determine the costs through a formal system of accounting. Costs can be classified on various bases and cost sheet is a statement presenting the items entering into cost of products or services.

5.1.3.9 Key Words

Direct Expenses: expenses that can easily be identified with a particular product.

Indirect Expenses: expenses which cannot be easily identified with a particular product.

Overheads: total of all indirect expenses.

Works Cost: prime cost + factory overheads.

Cost Of Production: works cost + administration overheads.

Cost Of Sales: cost of production + selling and distribution overheads.

Cost Sheet: a statement which is prepared to ascertain the cost of sales.

Tenders: a statement which quotes the price for a particular job or level of production activity.

5.3.10 Self Assessment Questions

1. What are the limitations of financial accounting?
2. Justify the need for cost accounting.
3. Explain the various bases for classification of costs.
4. What are the differences between 'cost sheet' and 'tender'.
5. Prepare a cost sheet for the production of 100 units of an article using imaginary figures.
6. Prepare a statement of cost showing:

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- (a) value of materials consumed
- (b) total cost of production
- (c) cost of goods sold and
- (d) the amount of profit

From the following details relating to a toy manufacturing concern:

Rupees

Opening stock: raw materials

25,000

finished

goods

20,000

Raw materials purchased

2,50,000

Wages paid to labourers

1,00,000

Closing stock: raw materials

20,000

finished goods

25,000

Chargeable expenses

10,000

Rent, rates and taxes (factory)

25,000

Motive power

10,000

Factory heating and lighting

10,000

Factory insurance

5,000

Experimental expenses

2,500

Waste materials in factory

1,000

Office

salaries

20,000

Printing and stationery

1,000

Salesmen's

salary

10,000

Commission to travelling agents

5,000

Sales

5,00,000

7. Kolam products Ltd., produces a stabilizer that sells for rs.300. An increase of 15% in the cost of materials and 10% in the cost of labour is anticipated. If the only figures available are those given below, what must be the selling price to give the same percentage of gross profit as before?

⊞ Material costs have been 45% of cost of sales

⊞ Labour costs have been 40% of cost of sales

⊞ Overhead costs have been 15% of the sales

⊞ The anticipated increased costs in relation to the present sale

⊞ Price would cause a 35% decrease in the amount of present gross

Profit.

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5.1.3.11 Key To Self Assessment Questions (For Problems

Only)

6. Materials used rs.2,55,000; prime cost rs.3,65,000; works cost

Rs.4,18,500; cost of production rs.4,39,500; cost of sales rs.4,49,500 and

profit rs,50,500.

7. Selling price: rs.332.25.

5.1.3.12 Case Analysis

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

10,000

units

14,000

units

Rs.

Rs.

Sales realisation

2,00,000

2,80,000

Variable overheads

50,000

70,000

Semi-variable overheads

20,000

22,000

Fixed overheads

40,000 40,000

He gets an order for a quantity equivalent to 20% of the operated

Capacity and even on this additional production profit margin is desired

At the same percentage on sales realisation as for production to operated

Capacity. As you are a cost manager, he approached you to advise him as

To what should be the minimum price to realise this objective.

Solution:

Computation of prime cost

Profit margin is 20% on sale

Therefore cost of sale, 80% of rs.2,00,000 i.e. 1,60,000

Variable overheads 50,000

Semi-variable overheads 20,000

Fixed overhead 40,000 1,10,000

Prime cost 50,000

Since an additional production of 4000 units requires an increase

of rs.2000 in semi-variable expenses, an additional production of 2000

units will require an increase of rs.1000 in semi-variable expenses:

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Differential cost of production of 2000 extra units

10000

12000 Differential Cost

Units

Units

For 2000 Units

Rs.

Rs.

Rs.

Prime cost

50,000

60,000

10,000

Variable overheads

50,000

60,000

10,000

Semi-variable overheads

20,000

21,000

1,000

Fixed overheads

40,000

40,000

1,60,000

1,81,000

21,000

The different cost for 1 unit is $\text{rs.}21000 \div 2000 \text{ units}$ i.e. Rs.10-50. Profit margin required is 20% on sale or 25% on cost. Hence the minimum selling price = $\text{rs.}10.50 + \text{rs.}2.625 = \text{rs.}13.125$.

Lesson 5.2

Standard Costing And Variance Analysis

5.2.1 Introduction

During the evolutionary stage of costing, the focus was only on the determination of actual cost i.e. The main activity of the cost accountants was determining the actual cost of production. This resulted in the non-availability of cost control measures to the management. Standard costing was developed by cost accountants to meet these contingencies.

5.2.2

Know the meaning of standard costing

Understand the advantages of standard costing system

Understand the different kinds of variances with special reference

to material variance and labour variance

Understand the reasons for these variances

Realize the importance of variance analysis

5.2.3 Contents of concepts:

5.2.3.1 Meaning Of Standard Costing

5.2.3.2 Objectives Of Standard Costing

5.2.3.3 Advantages Of Standard Costing

5.2.3.4 Limitations Of Standard Costing

5.2.3.5 Standard Costing And Budgetary Control

5.2.3.6 Variance Analysis

5.2.3.7 Cost Variances

5.2.3.8 Direct Material Cost Variance

5.2.3.9 Direct Labour Cost Variance

5.2.3.10 Summary

5.2.3.11 Keywords

5.2.3.12 Self Assessment Questions

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5.2.3.13 Key To Self Assessment Questions

5.2.3.1 Meaning Of Standard Costing

Standard costing is a technique which uses standards for costs and revenues for the purpose of control through variance analysis. Standard costing involves the setting of predetermined cost estimates in order to provide a basis for comparison with actual costs. Standard costing is universally accepted as an effective instrument for cost control in industries.

A standard cost is a planned cost for a unit of product or service rendered. According to h.j. wheldon, “standard costs are pre-determined or forecast estimates of cost to manufacture a single unit or a number of units of product during a specific immediate future period”. Standard cost is defined in the cima official terminology as: “a predetermined calculation of how much costs should be under specified working conditions. It is built up from an assessment of the value of cost elements and correlates technical specifications and the qualification of materials, labour and other costs to the prices and/or usage rates expected to apply during the period

in which the standard cost is intended to be used. Its main purpose is to provide basis for control through variance accounting for the valuation of stock and work-in-progress and in some cases, for fixing selling prices”.

5.2.3.2 Objectives Of Standard Costing

⌘ The objectives of standard costing technique are as follows:

⌘ To provide a formal basis for assessing performance and efficiency.

⌘ To control costs by establishing standards and analyzing of variances.

⌘ To enable the principle of ‘management by exception’ to be practiced at the detailed operational level.

⌘ To assist in setting budgets

To achieve the above objectives the following steps are adopted in standard costing:

⌘ Determining the standard for direct material, direct labour and

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different overheads

⌘ Ascertaining the actual cost of production

⌘ Ascertaining the variances by comparing actual costs with standard costs

⌘ Analyse the variances to know the reason for variances.

⌘ Adopting corrective measures to control the variances in futures.

5.2.3.3 Advantages Of Standard Costing

A good standard costing system results in the following advantages:

⌘ The setting of standards should result in the best resources and

methods being used and thereby increase efficiency.

⌘ Budgets are compiled from standards.

⌘ Actual costs can be compared with standard costs in order to evaluate performance

⌘ Areas of strengths and weakness are highlighted

⌘ It acts as a form of feed forward control that allows an organization to plan the manufacturing inputs required for different levels of output.

⌘ It acts as a form of feedback control by highlighting performance that did not achieve the standard set.

⌘ It operates via the management by exception principle where only those variances (i.e. Differences between actual and expected results) which are outside certain tolerance limits are investigated, thereby saving managerial time and maximizing managerial efficiency.

⌘ The process of setting, revising and monitoring standards encourages reappraised of methods, materials and techniques thus leading to cost control as an immediate effect and to cost reduction as a long term effect.

5.2.3.4 Limitations Of Standard Costing

Standard costing suffers from the following limitations:

⌘ A lot of input data is required which can be expensive

⌘ Unless standards are accurately set any performance evaluation will be meaningless.

⌘ Uncertainty in standard costing can be caused by inflation,

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technological change, economic and political factors, etc.

Standards therefore need to be continually updated and revised.

⌘ The maintenance of the cost data base is expensive.

⌘ Setting of standards involves forecasting and subjective judgments with inherent possibilities of error and ambiguity.

⌘ Standard costing cannot be adopted in the firms which do not have uniform and standard production programme.

⌘ It is very difficult to predict controllable and uncontrollable variances.

5.2.3.5 Standard Costing Vs. Budgetary Control

Standard costing and budgetary control are control techniques adopted in a firm with specific objectives. Following points of differences between the two can be observed:

1. Standard costing is a long range control activity developed and adopted with focus on production. Budgetary control is an activity concerned with every functional area of the firms and functional budgets are prepared to control that function in a shorter term.
2. Standard costs are scientifically predetermined. Budgetary control is concerned with the overall profitability and financial position of the concern.
3. Standard costing is concerned with ascertainment and control of costs. Budgetary control is concerned with the overall profitability

and financial position of the concern.

4. The emphasis of standard costing is on what should be the cost whereas in budgetary control the emphasis is on the level of costs not to be exceeded.

5. Standards are determined for each element of cost. Budgets are determined for a specified period.

6. Standard cost is a projection of cost accounts. Budget is a production of financial accounts.

7. Standard costing is concerned with the control of costs and is more intensive in scope. Budgetary control is concerned with the operation of business as a whole and is more extensive.

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5.2.3.6 Variance Analysis

The difference between the standard cost and the actual cost is known as 'cost variance'. If actual cost is less than the standard cost, the variance is favorable. If the actual cost is more than the standard cost, the variance is unfavorable. A favorable variance indicates efficiency, while an unfavorable one denotes inefficiency. However, mere knowledge of these variances would not be useful for ensuring cost control. These have to be thoroughly analyzed so as to find out the contributory factors. It would then be possible to find out whether the variances are amenable to control or not. The term 'variance analysis', thus, may be defined as 'the resolution into constituent parts and the explanation of variances'.

Variances are of two types: cost variances and sales variances. In

this lesson cost variances relating to material and labour are explained.

5.2.3.7 Cost Variances

As noted previously, the difference between the standard cost and the actual cost is known as 'cost variance'. The total cost variance should be split into its constituent parts, in order to analyze the cost variances in greater detail. The following figure reveals the picture clearly:

Total cost variance

Direct Material Direct Labour Overhead

Cost Variance Cost Variance

Cost Variance

(DMCV) (DLCV) (OCV)

Price

Usage Rate Efficiency Variable Fixed

Variance Variance Variance Variance Overhead Overhead

(DMPV)

(DMUV) (DLRV) (DLEV)

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Cost Cost

Variance Variance

(VOVC) (FOCV)

Expenditure Volume

Variance

Variance

(FOEXPV)

(FOVV)

5.2.3.8 Direct Material Cost Variance

It is the difference between the standard cost of material specified for the output achieved and the actual cost of materials used. The standard cost materials is computed by multiplying the standard price with the standard quantity for actual output and the actual cost is obtained by multiplying the actual price with actual quantity. The formula is:

$$= \text{Standard Cost For Actual Output} - \text{Actual Cost}$$

or

$$\text{DMCV} = (\text{Standard Price} \times \text{Standard Quantity For Actual Output})$$

$$- (\text{Actual Price} \times \text{Actual Quantity})$$

$$= (\text{SP} \times \text{SQ}) - (\text{AP} \times \text{AQ}).$$

Example 1.

The standard cost of material for manufacturing a unit of a particular product is estimated as under :

16 kg of raw materials @ rs. 1 per kg. On completion of the unit it

was found that 20 kg. Of raw material costing rs. 1.50 per kg. Have been consumed. Compute material cost variance:

$$\text{DMCV} = (\text{SP} \times \text{SQ}) - (\text{AP} \times \text{AQ})$$

$$= (16 \times 1) - (20 \times 1.50)$$

$$= \text{Rs. } 14 \text{ (Adverse)}$$

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Direct Material Price Variance (DMPV)

It is that portion of material cost variance which is due to the

difference between the standard prices specified and the actual price paid. This variance may be due to a number of reasons: change in price, inefficient buying, standard quality of materials not purchased, favorable discounts not obtained etc. The formula is:

$$\text{Dmpv} = \text{actual quantity} (\text{standard price} - \text{actual price})$$

If the actual price is more than the standard price, the variance would be adverse and in case the standard price is more than the actual price, it would result in a favourable variance.

Example 2.

Use the information given in example 1 and compute the material price variance.

$$\text{DMPV} = \text{AQ} (\text{SP} - \text{AP})$$

$$= 20 (1 - 1.50)$$

$$= \text{Rs. } (10) \text{ Adverse.}$$

Direct Material Usage Or Quantity Variance (DMUV)

It is the difference between the standard quantity specified and the actual quantity used. This variance may arise because of: careless handling of materials, wastage, spoilage, theft, pilferage, changes in product design, use of inferior materials, defective tools and equipment etc. The formula is:

$$\text{DMUV} = \text{Standard Price} (\text{Standard Quantity For Actual Output} - \text{Actual Quantity})$$

$$= \text{SP} (\text{SQ} - \text{AQ}).$$

Example 3.

Use the information given in example 1 and compute the material usage variance.

$$\text{DMUV} = \text{SP} (\text{SQ} - \text{AQ})$$

$$= 1 (16 - 20)$$

$$= \text{Rs. } 4 \text{ (Adverse)}$$

Note. The total of material price and usage variances is equal to material cost variance. Thus,

$$\text{DMCV} = \text{DMPV} + \text{DMUV}$$

in the example that has been used so far, let us verify this:

$$\text{DMCV} = \text{DMPV} + \text{DMUV}$$

$$\text{Rs. } 14 \text{ (A)} = \text{Rs. } 10 \text{ (A)} + \text{Rs. } 4 \text{ (A)}$$

Illustration 1.

A manufacturing concern which had adopted standard costing furnishes the following information.

Standard :

Material for 70 kgs. Finished products

100 kgs.

Price Of Material

Rs. 1 Per Kg.

Actual :

Output 2,10,000

kgs.

Materials

used 2,80,000

kgs.

Cost of materials

Rs.2,52,000

Calculate :

a)Material usage variance

b)Material price variance

c)Material cost variance

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Solution:

For an output of Rs.70 kgs. Of finished products, standard quantity of material output is 100 kgs.

Therefore for the output of 2,10,000 kgs., standard quantity of material input should be = $\{100/70 \times 2,10,000\} = 3,00,000$ kgs.

Actual price per kg. = $2,52,000 / 2,80,000 = .90$ paise

(a)

Material usage variance :

= Standard Price (Standard Quantity – Actual Quantity)

= Rs.1 (3,00,000 – 2,80,000) = Rs. 20,000 (Favorable)

(b)

Material price variance :

= Actual Quantity (Standard Price – Actual Price)

= 2,80,000 (1- .90) = Rs. 28,000 (Favorable)

(c)

Material cost variance :

$$= \text{Standard Quantity} \times \text{Standard Price} - \text{Actual Quantity} \times$$

Actual Price

$$= (3,00,000 \times 1) - (2,52,000)$$

$$= \text{Rs. } 48,000 \text{ (Favorable)}$$

Verification:

Material cost variance = material price variance + material usage
variance.

$$\text{Rs. } 48,000 \text{ (Favorable)} = \text{Rs. } 28,000 \text{ (Favorable)} + \text{Rs. } 20,000$$

(Favorable).

Illustration 2.

From the following particulars calculate :

₹ Total materials cost variance;

₹ Material price variance; and

₹ Material usage variance.

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Standard

Actual

Materials Units

Price (Rs.)

Units

Price (Rs.)

1.2

A

1,010

1.0

1,080

1.8

B

410

1.5

380

1.9

C

350

2.0

380

Solution:

(i) **Material Cost Variance** = $(SQ \times SP) - (AQ \times AP)$

Standard Cost Materials

Actualcost Materials

Rs. Rs.

Rs.

Rs.

Material A 1,010 Units @ 1.0 = 1,010

1080Units@1.20 =1,296

Material B 410 Units @ 1.5 = 615

380Units@1.80 =684

Material C 350 Units @ 2.0 = 700

380 Units @ 1.90 = 722

Total Standard Cost

2,325

Total actual cost 2,702

. . . Materials Cost Variance = Rs. 2,325 – Rs. 2,702

= Rs. 377 Adverse.

(ii) Material Price Variance = Actual Quantity (St. Price – Actual Price)

Material A : 1,080 Units (1 – 1.20) = 216 Adverse

Material B : 380 Units (1.5 – 1.80) = 114 Adverse

Material C : 380 Units (2.0 – 1.90) = 38 Favourable

Total Material Price Variance = 292 Adverse

(iii) Material Usage Variance = St. Price (St. Quantity – Actual Quantity)

Material A : Rs. 1 (1,010 Units – 1,080 Units) = Rs. 70 Adverse

Material B : Rs. 1.5 (410 Units – 380 Units) = Rs. 45 Favourable

Material C : Rs. 2 (350 Units – 380 Units) = Rs. 60 Adverse

Total Material Usage Variance = Rs. 85 Adverse

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Verification

Materials Cost Variance = Materials Price Variance + Material

Usage Variance

Rs. 377 (A) = Rs. 292 (A) + Rs. 85 (A)

= Rs. 377 Adverse

Illustration 3.

From the following particulars compute material cost variance,
price variance and usage variance.

Quantity Of Materials Purchased

3000Unit

Value Of Materials Purchased

Rs. 9,000

Standard Quantity Of Materials Required

Per Tonne Of Output

30 Units

Standard Price Of Material

Rs.2.50Per Unit

Opening Stock Of Material

Nil

Closing Stock Of Material

500Units

Output During The Period

80Tonnes.

Solution.

Material Consumed = 3,000 – 500 = 2,500 Units

Actual Price Of Material = Rs. 9,000/3,000 = Rs. 3 Per Unit

Standard Quantity For Actual

Output

$$= 30 \times 80 = 2,400 \text{ Units}$$

Material Cost Variance (DMCV) = (St. Price \times Std. Qty) – (Actual Price

\times

Actual

Quantity)

$$= (2.50 \times 2,400) - (3 \times 2,500)$$

$$= 6,000 - 7,500 = \text{Rs. } 1,500 \text{ (Adverse)}$$

Material Price Variance (DMPV) = Actual Quantity (Sp – Ap)

$$= 2,500 (2.50 - 3) = 2,500(.50)$$

$$= \text{Rs. } 1,250 \text{ (Adverse)}$$

Material Usage Variance

(DMUV)

$$= \text{Std. Price (Sq - Aq)}$$

$$= 2.50(2,400 - 2,500)$$

$$= \text{Rs. } 250 \text{ (Adverse)}$$

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Verification :

$$\text{DMCV} = \text{DMPV} + \text{DMUV}$$

$$1,500 \text{ (A)} = 1,250 \text{ (A)} + 250 \text{ (A)}$$

Illustration 4.

Given that the cost standards for material consumption are 40 kgs.

At rs. 10 per kg., compute the variances when actuals are :

(a)

48 kgs. At rs. 10 per kg.

(b)

40 kgs. At rs. 12 per kg.

(c)

48 kgs. At rs. 12 per kg.

(d)

36 kgs. At rs. 10 per kg.

Solution :

Material Cost Variance = (SQ × SP) – (AQ × AP)

(a)

40 kgs. @ rs. 10 – 48 kgs. @ rs. 10 = rs. 80 adverse

(b)

40 kgs. @ rs. 10 – 40 kgs. @ rs. 12 = rs. 80 adverse

(c)

40 kgs. @ rs. 10 – 48 kgs. @ rs. 12 = rs. 176 adverse

(d)

40 kgs. @ rs. 10 – 36 kgs. @ rs. 10 = rs. 40 favourable

Material Usage Variance = Standard Price (Standard Qty. – Actual Qty.)

(a)

Rs. 10 [40 kgs. – 48 kgs.] = rs. 80 adverse

(b)

Rs. 10 [40 kgs. – 40 kgs.] = nil

(c)

Rs. 10 [40 kgs. – 48 kgs.] = rs. 80 adverse

(d)

Rs. 10 [40 kgs. – 36 kgs.] = rs. 40 favourable

Material Price Variance = AQ(SP – AP)

(a)

48 kgs. [rs. 10 – rs. 10] = nil

(b)

40 kgs. [rs. 10 – rs. 12] = 80 adverse

(c)

48 kgs. [rs. 10 – rs. 12] = 96 adverse

(d)

36 kgs. [rs. 10 – rs. 10] = nil

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5.2.3.9 Direct Labour Cost Variance (DLCV)

Labour variances are calculated like material variances. The direct labour cost variance is the difference between the standard direct wages specified for the activity achieved and the actual direct wages paid. The formula is :

$DLCV = \text{Standard Cost For Actual Output} - \text{Actual Cost}$

or

$= (\text{Standard Rate} \times \text{Standard Time For Actual Output}) -$

$(\text{Actual Rate} \times \text{Actual Time})$

$= (SR \times ST) - (AR \times AT)$

Example 4 :

Standard Hours

5,000

Standard

Wage

Rate

Rs.4

Per

Unit

Actual Hours

6,000

Actual

Wage

Rate

Rs.3.50

Per

Unit

calculate labour cost variance.

Solution :

$$\text{DLCV} = (\text{SR} \times \text{ST}) - (\text{AR} \times \text{AT})$$

$$= (4 \times 5,000) - (3.50 \times 6,000)$$

$$= 20,000 - 21,000$$

$$= \text{Rs. } 1,000 \text{ (Adverse)}$$

The labour cost variance may arise on account of difference in

either rates of wage or time. Thus, it may be analysed further as (i) labour

rate variance, and (ii) labour time or efficiency variance.

Direct Labour Rate Variance (DLRV)

It is the difference between the standard rate specified and the actual rate paid. It is also called 'rate of pay variance or wage rate variance'. This would arise, usually, because of : (i) excessive overtime, (ii) employment of wrong type of labour (employing skilled person in place of an unskilled one), (iii) overtime workers engaged more or less than the standard, (iv)

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employment of labour at higher rates due to shortage of workers etc. The formula for calculating labour rate variance is as under :

Direct Labour Rate Variance = Actual Time (Standard Rate – Actual Rate)

$$DLRV = AT (SR - AR)$$

Direct Labour Time Or Efficiency Variance (DLEV)

It is the difference between the standard labour hours specified and the actual hours spent on the works. This variance is primarily concerned with the standard wage rate. As such, where piece wage payment is in force, there will be no labour efficiency variance. Labour efficiency variance arises on account of any one or combination of factors such as : (i) lack of supervision, (ii) poor working conditions in the factory, (iii) use of sub-standard or higher standard materials, (iv) inefficiency of workers due to inadequate training, (v) lack of proper tools, equipment and machinery, (vi) higher labour turnover etc. Symbolically,

Labour Time Or Efficiency Variance = Standard Rate (Standard Time For Actual Output – Actual Time)

$$DLEV = SR (ST - AT)$$

Illustration 5.

Data Relating To A Job Are As Thus:

Standard Rate Of Wages Per Hour

Rs. 10

Standard

Hours 300

Actual Rate Of Wages Per Hour

Rs. 12

Actual

Hours

200

You are required to calculate –

(i) labour cost variance, (ii) labour rate variance and (iii) labour efficiency variance.

Solution.

(i) Labour Cost Variance = Standard Cost – Actual Cost

= Std. Rate × Std. Time) – (Actual

Rate

×

Actual

Time)

= (300 × 10) – (200 × 12)

= 3,000 – 2,400 = 600 (Favourable)

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(ii) Labour Rate Variance = Actual Time (Std. Rate – Actual Rate)

$$= 200 (10 - 12) = 400 \text{ (Adverse)}$$

(iii) Labour Efficiency

Variance

$$= \text{Std. Rate (Std. Time - Actual Time)}$$

$$= 10 (300 - 200) = 1,000 \text{ (Favourable).}$$

Verification :

$$\text{DLCV} = \text{DLRV} + \text{DLEV}$$

$$600 \text{ (F)} = 400 \text{ (A)} + 1000 \text{ (F)}$$

Illustration 6.

Standard hours for manufacturing two products m and n are 15

hours per unit and 20 hours per unit respectively. Both products require

identical kind of labour and the standard wage rate per hour is rs. 5. In

the year 2011, 10,000 units of m and 15,000 units of n were manufactured.

The total of labour hours actually worked were 4,50,500 and the actual

wage bill came to rs. 23,00,000. This included 12,000 hours paid for @

rs. 7 per hour and 9,400 hours paid for @ rs. 7.50 per hour, the balance

having been paid at rs. 5 per hour. You are required to compute the labour

variances.

Solution :

Labour Cost Variance = Standard Cost For Actual Output – Actual Cost

Standard cost :

$$\text{Standard Time : M} = 10,000 \times 15 = 1,50,000$$

$$\text{N} = 15,000 \times 20 = 3,00,000$$

4,50,000 Hours

Rs.

For Product M

$$= 10,000 \times 15 \times 5 = 7,50,000$$

$$\text{For Product N} = 15,000 \times 20 \times 5 = 15,00,000$$

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Total Standard Cost

22,50,000

Rs.

Rs.

$$\text{Total Actual Cost} = 23,00,000$$

$$\text{Labour Cost Variance} = 22,50,000 - 23,00,000$$

$$= 50,000 \text{ (A)}$$

$$\text{Labour Rate Variance} = \text{Actual Hours} \times (\text{Std. Rate} - \text{Actual Rate})$$

Rs.

Rs.

$$= 12,000(5 - 7)$$

=

$$24,000 \text{ (A)}$$

$$= 9,400(5 - 7.50)$$

=

23,500 (A)

= 4,29,100(5 – 5)

= –

Total

47,500 (A)

Labour Rate Variance = Std. Rate × (Std. Time – Actual Time)

= Rs. 5 × (4,50,000 – 4,50,500)

= Rs.2,500 (A)

Verification:

labour Cost Variance = Labour Rate Variance + Labour Efficiency

Variance

50,000 (A) = Rs. 47,500 (A) + Rs. 2,500 (A)

= Rs. 50,000 (A)

Idle Time Variance (ITV)

Idle time variance, a component of labour efficiency variance, is

represented by the standard cost of the actual hours for which the workers

remain idle due to abnormal circumstances, like non-availability of raw

materials, power cut, breakdown of machinery etc. Symbolically :

Idle Time Variance = Standard Hourly Rate × Idle Time Or Hours

= SR × IT

This variance is always adverse. The total of labour rate, idle time and efficiency variances would be equal to labour cost variance, as shown below:

Illustration 7.

100 workers are working in a factory at a standard wage of rs. 4.80 per hour. During a month there are four weeks of 40 hours each. The standard performance is set at 360 units per hour. The following is the summary of the wages paid during the month:

91 workers were paid @ rs. 4.80 per hour

5 workers were paid @ rs. 5.00 per hour

The remaining were paid @ rs. 4.60 per hour

Power failure stopped production for 2 hours actual production 57,960 units. Calculate labour variances.

Solution.

1. Labour Cost Variance

= Standard Cost – Actual Cost

= Rs. 77,280 – Rs. 76,832 = Rs. 448 (Fav.)

(I) Standard Cost

= Std. Rate Per Hour × 100 × Units Produced / Std.

Production per hour

= $4.80 \times 100 \times 57,960 / 360 = \text{Rs. } 77,280$

(ii) **Actual Cost** For The Month (For $40 \times 4 = 160$ Hrs.)

No. Of Workers × Hrs. During The Month × Rate Paid.

Rs.

$$91 \times 160 \times 4.80 = 69,888$$

$$5 \times 160 \times 4.80 = 4,000$$

$$4 \times 160 \times 4.60 = 2,944$$

$$76,832$$

2. Labour rate variance

= Actual Hours (Std. Rate – Actual Rate)

$$(A) (5 \times 160) (Rs. 4.80 - Rs. 5.00) = Rs. - 160 (Adv.)$$

$$281$$

$$(B) (4 \times 160) (Rs. 4.80 - Rs. 4.60) = Rs. + 128 (Fav.)$$

$$Rs. - 32 (Adv.)$$

Note. For 91 workers rate variance is not calculated because they are paid at std. Rate.

3. Labour efficiency variance

= Std. Rate (Standard Time – Actual Time)

$$= Rs. 4.80 (16,100 \text{ Hours} - 15,800 \text{ Hours})$$

$$= Rs. 1,440 (Fav.)$$

Notes. (I) Standard Time

= No. Of Employees \times Quantity Produced / Std. Quantity

Per Hour

$$= 100 \times 57,960 / 360 = 16,100 \text{ Hours.}$$

(Ii) Actual Time

= Possible Hours – Idle Time

= 100×160 Hours – 100×2 Hours

= 15,800 Hours

4. Idle Time Variance

= Std. Rate \times Idle Time

= Rs. 4.80 \times 200 Hours = 960 (A)

Verification :

LCV = LRV + LEV + ITV

448 (F) = Rs. 32 (A) + Rs. 1,440 (F) + 960 (A)

= Rs. 448 (F).

5.2.3.10 Summary

Cost control is a concrete step towards profit maximization and standard costing with the aid of variance analysis ensures this. Cost control is achieved by adopting the following steps: pre – determination of standard costs, consumption of actual costs, comparison of actual costs with standard costs and recording of the variances if any and analyzing and reporting on these variances to the management so that suitable action may be taken whenever necessary in order to control the costs in future.

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5.2.3.11 Key Words

Standard costing: this is a technique of cost accounting employed for cost control.

Variances: Differences between the standards and the actual results

Favorable variances: Actual cost is lower than the standard cost.

Unfavorable variance: Actual cost is higher than the standard cost

5.2.3.12 Self Assessment Questions

1. The following are the particulars regarding the standard and the actual production of the product x:

Standard quantity of material per unit – 5 kgs

Standard price – Rs.5Per kg

Actual number of units produced – 400 units.

Actual quantity of material used 2,200 kgs

Actual price of material – Rs. 4.80 Per kg

Calculate : (i) material price and (ii) material usage variances.

2. A furniture manufacturer makes sun mica tops for tables. From the following information, find out price variance, usage variance and material cost variance.

Standard quantity of sun mica per table

4 sq. Ft.

Standard price per sq. Ft. Of sun mica

Rs. 5.00

Actual production of tables

1,000

Sun mica actually used

4,300sqft.

Actual purchase price of sun mica per sq. Ft.

Rs. 5.50

Who is the responsible for these variances?

3. From the data given below compute price and usage variances:

Standard

Actual

Quantity

Unit Total Quantity Units

Total

Kg.

Price

Kg. Price

Rs

Rs.

Rs. Rs. Rs.

Material A

4

1.00 4.00 2

3.50

7.00

Material B

2

2.00 4.00 1

2.00

2.00

Material C

2

4.00 8.00 3 3.00

9.00

Total

8

16.00 6

18.00

4. The standard cost card for a product shows:

Per

unit

Rs.

Material cost – 2 kg. @ 2.50 Each

5.00

Wages – 2 hours @ 50 p. Each

1.00

The actual which have emerged from business operations are as

follows:

Production

8,000units

Material consumed:

16,500 Kgs. @ Rs.2.40 Each

Rs. 39,600

Wages paid:

18,000 Hours @ 40 p. Each

Rs. 7,200

Calculate appropriate material and labour variances.

5. The standard cost for a product is:

Time 10 hours per unit, cost rs. 5 Per hour.

The actual performance was:

Production

1,000 units

Hours taken:

Production

10,400 hours

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Idle time

400 hours

Total time

10,800 hours

Payment made, rs. 56,160 @ Rs. 5.20 Per hour

Calculate (a) labour rate variance, (b) labour efficiency variance,

(C) idle time variance, (d) labour cost variance.

5.2.3.13 Key To Self Assessment Questions

Q.No 1: (I) Material Price Variance Rs 440 (F)

(II) Material Usage Variance Rs. 1000 (A)

Q.No 2: (I) Price Variance Rs. 2150 (A)

(II) Usage Variance Rs. 1500 (A)

(III) Cost Variance Rs. 3650 (A)

Q.No 3: (I) Material Cost Variance Rs. 2 (A)

(II) Material Price Variance Rs. 2 (A)

(III) Material Usage Variance – Nil

Q.No 4: (I) Material Cost Variance Rs. 400 (F)

(II) Material Price Variance Rs. 1650 (F)

(III) Material Usage Variance Rs. 1250 (A)

(IV) Lcv: Rs. 800 (F)

(V) Lev: Rs. 1000 (A)

(VI) Lrv: Rs.1800 (F)

Q.No 5: (I) Lcv: Rs.6160 (A)

(II) Lrv: Rs. 2160 (A)

(III) Lev: Rs. 2000 (A)

(IV) Itv: Rs. 2000 (A)

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