Financial Management & Cost Accounting

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Financial Management & Cost Accounting

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Lesson-1

Introduction to Financial Management

1.1 DEFINITION OF FINANCIAL MANAGEMENT

Financial management may be defined as a managerial activity which is concerned with the planning and controlling of the financial resources of the firm. Some other definitions of financial management are

(a) Financial management deals with how the corporation obtains the funds (Financing decisions) and how it uses the funds (Investment decisions).
(b) Financial management is the application of planning and controlling function to finance function.
(c) Financial management is the area of the business management devoted to judicious use of capital and a careful selection of sources of capital in order to enable a business firm to move in the direction of reaching its goal.

1.2. IMPORTANT FINANCE FUNCTIONS

The main functions of financial management are:

(a) Investment decision
(b) Raising funds (Financing or capital decision)
(c) Distribution of returns earned from the assets to stakeholders (Dividend Decision)
(d) Liquidity decisions.

(a) Investment Decision (Long Term Asset Mix)

A firm raises funds in order to acquire long term assets. The acquisition of long term assets by a firm is called capital expenditure. Capital budgeting decisions are those decisions which involve capital expenditure. Capital budgeting decisions or capital expenditure decisions are most important for three reasons:

(a) Capital expenditure involves huge cash outlay
(b) Capital expenditure decisions are irreversible and if they are reversible they involve huge costs
(c) Capital expenditure decisions are long term in nature and can affect the firm for a long term

(b) Financing Decisions (Capital Mix Decisions)

In order to meet the investment needs of a firm, the finance managers need to search for sources of long term funds. The main sources of long term funds are:

(a) Equity capital, and
(b) Long term debts like long term loans or bonds, etc

While selecting the best sources of finance, it is important to select the optimum mix or composition of debt or equity which will maximize the value of the firm. The composition of various sources of long
term capital of a firm is called the capital structure of the firm. Hence, the capital structure indicates the proportion of debt and equity in the firm. There are many benefits associated with the use of debt capital such as:

(a) Debt is a cheaper source of finance
(b) It may increase the returns of equity shareholders

But debt also carries a risk. It carries a fixed obligation to pay interest. Due to this a higher proportion of debt in the capital structure of the firm can increase the financial risk of the firm. In the event of failure to make sufficient profit, the firm may face the insolvency.

(c) **Dividend Decision**

In this decision, the finance manager has to take a decision regarding whether to distribute all the profit earned by the firm to its shareholders, or to distribute only a part of the profits or not distribute any profit at all. The proportion of profit distributed as dividend is called dividend payout ratio and the proportion which is retained by the firm is called retention ratio. The divided decisions are taken under the dividend policy of the firm. The dividend policy of the firm can also affect the market value of the firm’s equity shares. Hence, the finance manager has to select an optimum dividend policy, which maximizes the market value of the firm’s share.

(d) **Liquidity Decisions**

It deals with short term asset mix. Apart from the above discussed three decisions which are primarily of long term nature, the finance manager also has to manage the day to day working capital finance of a firm. The working capital of a firm is represented by the current assets and current liabilities of the firm. The finance manager has to ensure optimum liquidity for the firm and at the same time carry out the day-to-day financial activities of the firm. Hence, the finance manager has to manage the working capital. Working capital decisions are called short term asset mix or liquidity decisions. More liquidity would decrease the risk of the business, however it would also reduce the profit. Thus it is a liquidity-risk-return trade off decision.

1.3. **GOAL OF FINANCIAL MANAGEMENT**

Financial management is concerned with the raising of funds and efficient allocation of these funds. These activities are primarily contained in the financing, investing and dividend decisions of the firm. The firm’s financing, investing and dividend decisions are unavoidable and continuous. In order to make these decisions rationally, the firm must have a goal. The firm can take all its financial decisions rationally by adhering to this goal. Hence the goal should be theoretically logical and operationally feasible for guiding the financial decision making. Two goals are presented for financial management decision.

(a) Profit Maximization.
(b) Shareholder’s Wealth Maximization.

1.3.1. **Profit Maximization**

It is argued that Profit maximization should be the goal of financial management because of the following reasons. Profit maximization is able to serve the society in an efficient manner. It is argued that the “price system” which is important part of a “market economy” indicates what goods /services
the society wants. The goods or services which are required more by the society have high demand, this leads to higher prices of such goods. It further signals all the profit oriented firms to enter into the business or production of such highly demanded goods and services. As a result, the supply of these goods and services increases and subsequently the demand and supply matches. The price at this point is called the equilibrium price. In the same way goods which are not required by the society have lower demand and lower prices. Hence firms tend to move out of business of such low demand products. Thus, ‘price System’ directs all the managerial efforts towards more profitable goods and services.

Profit maximization implies that the firm either produce more output with the same level of inputs or use less level of input for producing the same level of output. Hence, the resources of the society are efficiently utilised. In order to earn more profit, firms resort to profit maximization and hence make efficient use of the resources. They do so in order to achieve personal interests but in doing so, unknowingly they also serve the interest of the society. Hence, it is argued that ‘profit’ should be considered as the most appropriate measure of the firm’s performance.

**OBJECTIONS TO PROFIT MAXIMIZATION**

There are a few serious objections raised against the goal of profit maximization.

(a) Profit maximization assumes the presence of perfect competition. But it may not be true in the modern markets which are imperfect and where oligopoly and monopoly are common phenomena.

(b) It is vague the precise meaning of profit is not clear. Whether it indicates Short term profit or long term profit? Profit before tax or profit after tax? Operating profit or net profit? Hence it is not clear as to which profit is to be maximized.

(c) It ignores time value of money: The profit maximization criteria may not be able to distinguish projects in which the pattern of cash flow is different i.e. it cannot differentiate between projects which generate cash flows in the earlier years and projects which generate cash flows in the later years. This is because profit maximization goal has no provision for considering the time value of money.

It ignores risk: It means that it ignores the ‘uncertainty ‘associated with the profit. The profit maximization criteria may rate two decisions or projects as same if both of them have same profit. But it is unable to distinguish the project whose profit is more certain.
Lesson-2

Finance and Accounting

2.2. SHAREHOLDER’S WEALTH MAXIMIZATION (SWM) GOAL

It is accepted that the SWM goal is much superior to the profit maximization goal. It is based on the premise that financial decisions taken should aim to increase the ‘value’ of the firm. The value of the firm increases when the market price of the firm’s equity shares increases. And as the market price of the shares increases, the shareholders become wealthier. Hence all such financial decisions should be taken which increases the wealth of shareholders rather than that decisions/course of actions which erode their wealth. The decisions which can increase the wealth of shareholders are those which have a positive NPV (Net Present Value). NPV is defined as the Present value of benefits of a project minus the present value of costs of project.

\[ NPV = \text{Present value of benefits} - \text{Present value of costs} \]

The present value is found by applying a suitable discount factor to the expected cash flows. As the NPV is based on “cash” instead of “accounting profits” it is superior to profit maximization because while ‘profit may be ambiguous the ‘cash flow during a period’ is unambiguous. Moreover the rate of discounting factor takes into account the time value of money as well as the risk associated with the cash flows of a given project or course of action.

2.3. FINANCE & ACCOUNTING

The finance and accounting functions are closely related and they fall in the domain of the chief financial officer of the organization as shown in the Figure below:

<table>
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<th>Table 2.1: Organization of Finance Functions of a Firm</th>
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<tr>
<td><strong>Chief finance officer</strong></td>
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<td><strong>Treasurer</strong></td>
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<tr>
<td>Cash manager</td>
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<tr>
<td>Credit manager</td>
</tr>
<tr>
<td>Fund raising manager</td>
</tr>
<tr>
<td>Capital budgeting manager</td>
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<tr>
<td>Portfolio manager</td>
</tr>
<tr>
<td><strong>Controller</strong></td>
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<tr>
<td>Financial accounting manager</td>
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<tr>
<td>Cost accounting manager</td>
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<tr>
<td>Tax manager</td>
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<tr>
<td>Internal auditor</td>
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<td>Data processing manager</td>
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</table>

In popular perception, it is noted that Finance and Accounting are often considered indistinguishable and inseparable. However, it is important to know the differences between the two:

2.3.1. Record Keeping V/S Value Maximizing

Financial accounting is primarily related to the systematic recording, classifying, and summarizing of all financial transactions of a firm, and presenting them in various financial statements viz, balance sheet, profit and loss statement, funds flow statement and cash flow statement. Accounting function, thus, focuses primarily on recording what has happened. The role of finance manager is mainly involved in the decision making. He strives to take such financial decisions which will maximize the value of the firm, that is, maximize the market value of the equity shares of the firm, thereby maximizing the shareholders’ wealth. The role of the financial manager is different from the accountant, in the sense that, while making financial decisions, the financial manager uses the financial statements and data like balance sheet, P and L account, etc in raw form or use them in conjunction
Financial Management & Cost Accounting

with appropriate mathematical or statistical techniques, such as capital budgeting, operations research techniques, etc to take an appropriate decision.

2.3.2. Accrual V/S Cash Flow

The accountant prepares the accounting reports on the basis of accrual method that is recognized when the sales are made (and not when cash is received, the sales may be a credit sale for which cash has not been received. The accountant records it as ‘sales’, irrespective of whether it is a cash or a credit sale or cash receipt or no cash receipt is there.) But, the finance manager primarily dwells in the financial activities which involve cash inflows or cash outflows. He has to take decisions with respect to the timing, the magnitude and risks associated with cash flows.

2.3.4. Past V/S the Future

It can also be said as uncertain v/s certainty. An accountant’s job is to record what has happened, hence, it is historic in nature and refers to the past, where as the financial manager’s job is to manage financial resources of the firm and take a financial decision. These financial decisions refer to the future and affect the future of the firm. Hence, the finance function is future oriented. Also, it can be seen that as the accountant is concerned more with the past, he deals with ‘certainty’ where as a finance manager who is more concerned with the future, which is uncertain, deals with uncertainty and risk.
Lesson-3
Finance and Accounting

3.1. DEFINITION OF ACCOUNTING

Accounting may be defined as the process of recording, classifying, summarizing, analyzing and interpreting the financial transactions of firm. It also includes the communication of the results thereof to all the persons interested in such information. From the above definition, two points become important: (a) what are the various functions performed / served by accounting? And, (b) who are the persons / entities interested in such accounting information? Answers to these questions lie in the following paragraphs.

3.2. FUNCTIONS OF ACCOUNTING

a) Maintaining systematic records of all financial transactions :-
   It is one of the primary functions of accounting to systematically record each and every financial transactions of a firm. Hence, care is taken to ensure that no financial transaction escapes accounting. Accounting ensures this by maintaining records in a chronological order in the original / subsidiary books of entry, posting to ledgers and preparation of Trial balance and final accounts.

b) To ascertain the results of operations i.e. Profit or Loss
   Other primary function of accounting is to correctly measure the profit earned or loss incurred during the given period (accounting period), Correct profit can be measured only when each and every financial transaction of the firm is considered, recorded and classified systematically.

c) To ascertain the Financial position of the firm :
   Accounting facilitates the preparation of a financial statement called balance sheet. It shows the assets and liabilities of the firm. The liabilities include "owner’s capital". From the balance sheet important information regarding the fixed assets, current assets, long term liabilities, short – term liabilities, working capital, liquidity of the firm can be gathered.

d) Meeting legal requirements :
   It is mandatory for joint stock Company to prepare the financial accounts in a prescribed form for various returns to be filed – income tax and sales tax department are prepared with the help of financial accounts.

e) Protection and safe guarding business assets :-
   Records (prepared and maintained by accounting) serve as evidence in the event of disputes regarding the title of ownership, of any plant and machinery, property etc.

f) Helps in Rational Decision Making:-
   Decision making becomes more rational in the light of correct and complete data regarding costs, sales revenues, growth patterns etc.

g) Communication and Reporting:-
   The financial transactions so recorded and processed are given certain concrete form to convey some information to others. The economic information contained in the financial statements and other reports is actually meant to be used by the firm itself or by different groups who are directly or indirectly interested or associated with the business enterprise.

3.3. USERS OF ACCOUNTING INFORMATION
Users refer to the entities who are interested in such information. The financial statements are used by the management owners (shareholders, partners, and proprietors), lenders, investors, government etc for different purposes.

a) Owners (Share Holders, Partners, Proprietors):

They are very much interested in the performance of the firm. They want to know about the profit earned and the overall financial position of the firm. Their interest in accounting information is very high because they have invested their money in the business.

b) Management:

It also uses accounting information for
1. Analyzing the previous year's performance
2. Corrective action plans
3. Future planning (sales budget, purchase budget cash budget, new investment, etc.)
4. Overall achievement of the long – term organization goal.

c) Creditors:

This category may include commercial banks, financial institutions, suppliers, or any other person / entity that has (or may) extend credit to the organization. These creditors study the financial statements of the firm to take a decision regarding whether to extend or not to extend credit to the firm. They gather the data regarding profitability of the firm and soundness of its financial position. They check the ability of the firm to repay the capital as well as the interest charges.

d) Employees:

Employees of the firm are interested in financial statements because their growth depends upon the firm's growth. Moreover, accounting information creates healthier relationship between employer and employee. It can avoid unjustified strikes, salary and wages hikes, bonus demand etc. If the company is growing fast then it is possible that employees may also purchase the shares of the company.

e) Investors:

This category includes persons / institutes / financial organizations / funds etc which have invested their money in the shares of the given firm. It also includes potential investors. These investors generally look for capital protection and sufficient capital gains.

f) Government:

Primarily the government is interested in the financial statements of firm for the purpose of taxation, labour and corporate laws. It may also verify whether the financial statements are correctly prepared or not.

g) Others:

These are the residuary classes which use the accounting information for different purposes. This class includes

1. Researchers
4. Economist
2. Consumers
5. Press and Public in general
3. Stock Exchanges
Lesson-4
Types of Accounting

4.1. TYPES OF ACCOUNTING:
To serve the purpose of achieving different objectives, different branches of accounting have emerged. The main among them are:-

4.2.1. Financial accounting:
The main aim of financial accounting is to ascertain the profit / loss made by the firm during a particular period and at the same time to ascertain the “financial position” of the firm at the end of the period (or on a particular date). Financial accounting is guided by many rules and regulations which may or may not be mandatory. The primary focus of financial accounting is to provide information to the outsider’s viz. shareholders, investors, government authorities, financial institutions, banks, creditors and other interested parties. The data contained in the financial statements (profit & loss account & balance sheet) can be used by the external stake holders to evaluate the profitability, liquidity, solvency etc of the firm.

4.2.2. Cost accounting:
Cost accounting is defined as the systematic recording, classifying and summarizing of all the costs incurred by the firm in carrying out various activities. The aim of cost accounting is to ascertain the cost of product or service. It therefore, facilitates cost control & cost reduction by identifying & exercising control over the main elements of cost (viz. material, labour & overheads). It enables the business firm is fixing the selling price of the product, preparing quotations etc. Hence cost accounting is primarily focussed on “managers/ internal users” for cost control.

4.2.3. Management accounting:
This special type of accounting is basically used for the purpose of “Decision Making”. This accounting is prepared exclusively for the use of management & hence called “management accounting”. Management accounting makes the use of information contained in “financial accounting” & “cost accounting” and helps the management in taking decisions regarding- policy formulation, planning, control, strategy etc. Clearly, management accounting is used for internal planning & control of activities.

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<th>Table- 4.1. Difference between Financial accounting &amp; Cost accounting</th>
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<td>2</td>
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<th></th>
<th>government etc.</th>
<th>Decision makers for cost efficient running of the plant.</th>
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<td>3</td>
<td>It is mandatory &amp; structured according to legal requirements &amp; other requirements</td>
<td>It is not mandatory &amp; is structured as per the requirements of internal users.</td>
</tr>
<tr>
<td>4</td>
<td>The generally accepted accounting principles (GAAP) are important in Financial Accounting</td>
<td>The generally Accepted Accounting principle (GAAP) are not so important in cost accounting.</td>
</tr>
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</table>
Lesson-5
Types of accounts and rules for Debit and Credit

5.1. ACCOUNTING MECHANICS: THE DOUBLE ENTRY SYSTEM

Today's accounting system is based on the double entry system developed in the 15th Century by Lucas Pocioli, a Franciscan monk. The double entry system is based on the basic premise that

\[ \text{Total liabilities} = \text{Total Assets} \]

Or

\[ (\text{Owner’s capital} + \text{outsider’s funds}) = \text{Total Assets} \]

It states that each and every financial transaction that takes place in a business organization has two aspects (or two effects which are equal and opposite). For example, if furniture is purchased by cash, then furniture account increases but at the same time cash decreases by the same amount. "A dual entry system of accounting is defined as the system which recognizes and records both the aspects of transactions."

5.1.1. T-accounts (or Ledgers)

A given financial transaction has two aspects and it is bound to affect two concerned accounts. The entries in the given account are made in a "t" – account. It consists of two sides, left side and right side. The left side is called debiting the account and the right side is called crediting the account. Making an entry on the left side of t-account is called debiting the account, and in the same way, making an entry on the right side of t-account is called crediting the account.

Table 5.1. A typical 'T' account is shown below:-

<table>
<thead>
<tr>
<th>Dr. Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amt. (Rs.)</th>
<th>Cr. Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amt. (Rs.)</th>
</tr>
</thead>
</table>

J.F. – refers to the page number of the journal at which the transaction is recorded (J.F =Journal Folio)

Up to this point, it is understood that in double entry system, a given transaction affects two accounts. Out of the given two accounts one a/c is to be debited and the other a/c is to be credited (by the same amount). In order to decide whether the account is to be debited or credited depends upon which type of account it is.

There are three types of accounts – Personal, Real, and Nominal. The rules regarding Dr and Cr these accounts are given below

1. **Personal Accounts**

   The accounts of all those persons, organizations, or entities from whom the company has either to receive money or has to pay money, are called personal accounts.

2. **Real Accounts**
The firm also owns property like land, building, plant and machinery, stock, cash etc. The accounts of various assets or property acquired by the firm, are classified as Real account.

### 3. Nominal Accounts

The accounts of various items which represent either *income and gain* or *expenses and loss* of the firm are nominal accounts. For example accounts of rent, wages, salary, telephone bills are classified as nominal accounts. Similarly dividend received a/c. interest earned a/c, commission a/c are also nominal accounts.

<table>
<thead>
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<th>Table- 5.2:Rules for Debit and Credit</th>
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<tbody>
<tr>
<td><strong>Type of Account</strong></td>
</tr>
<tr>
<td>1. Personal A/c</td>
</tr>
<tr>
<td>2. Real Account</td>
</tr>
<tr>
<td>3. Nominal Account</td>
</tr>
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</table>

Document used to Record (or capture) the details of a given transaction are:-

1. **Payment Voucher.**

   A payment voucher records all the details of a particular transaction whenever a payment is made by the company. A payment voucher is a standard form and contains all details of the payment being made. For example, when an expense is incurred, the supplier sends a bill which is to be paid. The account department prepares a payment voucher for that bill, and then makes a payment.

2. **Receipts on Money Receipt.**

   Whenever the company receives cash/cheque etc from any person / organization, then it gives a receipt to the person / organization. This receipt contains all relevant data of the transaction, such as date, amount, name of person, particulars, etc.

3. **Journal Voucher**
A journal voucher is used to record all the residual transactions. An internal transaction of the company which does not involve cash receipt or cash payment is to be recorded in a journal voucher.

5.3. THE ACCOUNTING PROCEDURE
The objective of accounting is to record cash and Credit transaction of the firm and after proper treatment, preparing the final accounts of the firm. The steps which are followed in accounting to accomplish goal are –

1. Recording of all business transaction in a primary book called journal.
2. All the entries of the journal must be then posted to appropriate ledgers. It is called ledger – posting.
3. All the ledgers are then balanced and their balances ascertained.
4. Preparation of final accounts – Trading a/c, P and L a/c and Balance sheet from the trial balance.

5.4. SOME BASIC TERMINOLOGY USED IN ACCOUNTING

1. Cash Basis Of Accounting
   It is one of the two main methods of accounting (Cash basis and Accrual basis). In this method the entire accounting is done by considering cash transactions only – i.e. all the income are recognized as income such as accrued income, income generated but not received etc are ignored. Another example is – sales is recognized not at the point of sale but at the time when cash is received. Similarly all expenses are recognized as an expenses only if actual cash is paid. Therefore accrued expense, prepaid – expense etc do not have any place in cash basis of accounting.
   
   Used by
   This system of accounting is generally used by individuals like doctors, lawyers engineers, brokers, small traders etc.
   
   Advantages
   It is simple method. It avoids the difficulties of accounting adjustments at the close date (i.e. at end of accounting year)

   Disadvantages
   These systems can not accurately reveal the profit / loss during a given accounting period.

2. Mercantile Basis Of Accounting (Accrual Basis): 
   This method is commonly used by business concerns. All incomes are recognized as incomes of the particular year in which they were generated (irrespective of the fact whether cash was received or not). Similarly all expenses are charged to the period in which they relate (irrespective of the fact that whether cash has been actually paid or not). for ex. – in accrual basis of accounting – if sales are made at the last day of accounting period, but the cash is not received, (it is expected to be received after 20 days) then, such a transaction, the sale is considered to be of the earlier year (irrespective of the fact whether cash has been received or not).
Similarly, if expenses are incurred this year, but the cash is to be paid in next accounting year, then also, it is to be considered as an expense of this year only (because the particular expense relates to this year only and not to any other year!)

Thus, from the above it can be seen that, the accrual basis of accounting strictly follows the accounting period concept. It has the ability to accurately reveal, the profit / loss incurred during a given accounting period. This is so because it considers each and every income pertaining to the particular accounting year (irrespective of the fact whether cash is received or not). This system of accounting requires the adjustments at the end of accounting period. It produces the final accounting which exhibits a true and fair view of the state of affairs.

3. Transaction

A business transaction means exchange of benefits (or value) between two persons / (entities). It arises out of exchange of goods / services. It has dual aspects – Receiving and giving the benefit.

Cash Transaction

A transaction which involves immediate payment (or Receipt) of cash, is called cash transaction.

Credit Transaction

For example when goods worth Rs. 2000 are sold on credit to Mr. Rajesh, then in such a case, Mr. Rajesh does not immediately pay cash to the firm. Such a transaction (buying or selling) in which the receipt of cash is postponed to a future date is a credit transaction.

A simple accounting entry, involving cash transaction:

Transaction: “Purchased Rs. 500 worth stationery by paying cash”

Rewriting the rules of debit and credit –

- Personal a/c - Debit the Receiver - Credit the giver
- Real a/c - Debit what comes in - Credit what goes out
- Nominal a/c - Debit all expenses and losses - Credit all incomes and gains

In the above transaction, the company receives. Stationery worth Rs. 500 (so stationery increases) but at the same time cash reduces by Rs. 500.

Attempting a very simple accounting entry, by following the rules stated above. We come to know that –
A dual entry system involves two affected accounts, one account is debited and other is credited by the same account. (But for that which account should be debited and which should be credited, we have to look at the above given rules).

Similarly, in an accounting entry, if the transaction was on credit (i.e. it did not involve immediate payment of cash, but cash payment was postponed to a future date).

The transaction becomes:

“Purchased stationery worth Rs. 500, on credit, from “Mahavir Stationery Stores”. one thing is certain from the above, that stationery a/c (stationery comes in), is a real a/c; and it will be debited.

<table>
<thead>
<tr>
<th>Stationery a/c Real a/c Comes in Stationery a/c Debited</th>
</tr>
</thead>
</table>

But, now another account, has to be credited by the same amount i.e. Rs.500. (But which account?). In case of a cash transaction, we identified that cash a/c was the relevant account, and as cash decreased by Rs.500, the rule followed was:

<table>
<thead>
<tr>
<th>Cash account (real account) Goes out cash a/c should be credited.</th>
</tr>
</thead>
</table>

But in case of a credit transaction; one thing is sure that stationery a/c is to be debited but the other account to be credited is that of the "supplier".

Credit Transactions are mainly of two types –

1. Credit Purchase
2. Credit Sales

**Credit Purchase**

In credit purchases, the company has taken the benefit (goods / services etc) but the company owes money to the concerned supplier. And the accounts persons/entities organizations to which the
company owes money are credited. (Moreover these persons are called creditors of the company)

In our case,

**CREDIT PURCHASE**

Received by company

<table>
<thead>
<tr>
<th>Stationery Mahavir Stationery Stores</th>
</tr>
</thead>
</table>

From the above diagram, it is clear that,

<table>
<thead>
<tr>
<th>Stationery a/c</th>
<th>Real a/c</th>
<th>Come in</th>
<th>Debit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahavir Stationery Stores a/c</td>
<td>Personal a/c</td>
<td>Giver</td>
<td>Credit</td>
</tr>
</tbody>
</table>

From the above, it can be concluded that -

1. Mahavir stationery store is the supplier.
2. The company has to pay Rs.500 to Mahavir Stationery Stores a/c (i.e. the company owes Rs.500 to Mahavir Stationery Stores.)

**Credit Sales**

It means the sales of goods has been made to the customer but he will make the payment within the credit period.

**CREDIT SALES**

Company (Seller) Mr. Joseph (Buyer)

In credit sales (by the company) to a buyer Mr. Joseph, Mr. Joseph owes money to the company. Always, the accounts of persons / entities / organizations, who owe money to the company, i.e. the company has to receive money from them, are debited. They are also called the Debtor of the company.

From the above diagram, it is clear that,

<table>
<thead>
<tr>
<th>Joseph’s a/c</th>
<th>Personal a/c</th>
<th>receiver</th>
<th>Debit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales a/c</td>
<td>Real a/c</td>
<td>Goes out</td>
<td>Credit</td>
</tr>
</tbody>
</table>
Lesson-6
Introduction to Journal

6.1. SOME BASIC TERMINOLOGY USED IN ACCOUNTING

1. CREDITORS
The persons to whom the company owes money in return of the benefit (goods, services, cash, etc) provided by them.

2. DEBTORS
They are persons who owe money to the company, in return of, the benefits received by them. The benefits may be in the form of goods, services, cash etc which is provided to him by the company.

3. JOURNAL
Journal is the “book of first entry”. All the financial transaction of the firm are first recorded in a journal in a date wise (chronological) manner. It also records which account is to be debited and which is to be credited. It is records a brief statement regarding the particular transaction, this statement is called Narration.

4. CAPITAL
The amount with which the trader starts his business i.e. the amount which has been invested in the business, is called capital.

5. DRAWINGS
Drawings represent the withdrawals of money (cash) or money’s worth (goods) by the proprietor from the business from capital for his personal use.

6. COMPOUND JOURNAL ENTRY
If two or more transactions can be combined, and shown in a single journal entry (without changing the meaning of the transaction), it is called a combined journal entry.
One thing to be noted here is, whether it is a single journal entry or a compound journal entry, the total debit should be equal to total credit.

7. SALES
Selling of goods in the normal course of business is called sales. It may be cash sales or credit sales.

8. CURRENT LIABILITIES
Those liabilities which are to be paid within one year are called current liabilities. For example trade creditors, Bills payable etc.

9. CURRENT ASSETS
Those assets which are meant for conversion into cash as soon as possible eg. stock of goods, debtors etc.

10. GOODS
The commodities bought for the purpose of resale are termed as goods. A Cloth merchant deals in cloth, therefore for him cloth – represents goods. Similarly for rice – Merchant “Rice” is “goods”.
Examples of some common Business Transactions (along with their analysis)
Illustration 6.1

Consider the following transactions

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1</td>
<td>Started business with Rs. 1000.</td>
</tr>
<tr>
<td>2</td>
<td>Received Rs. 50 From Mr. B.</td>
</tr>
<tr>
<td>3</td>
<td>Received Rs. 250 as commission.</td>
</tr>
<tr>
<td>4</td>
<td>Paid rent Rs. 50</td>
</tr>
<tr>
<td>5</td>
<td>Purchased a machine Rs. 500.</td>
</tr>
<tr>
<td>6</td>
<td>Purchased machine worth Rs. 1000 from AB and Co.</td>
</tr>
<tr>
<td>7</td>
<td>Proprietor with draws cash Rs. 80 for personal use.</td>
</tr>
<tr>
<td>8</td>
<td>Good returned to Mahesh Worth Rs. 200.</td>
</tr>
<tr>
<td>9</td>
<td>Goods worth Rs. 100 returned by Shyam.</td>
</tr>
</tbody>
</table>

Analysis

<table>
<thead>
<tr>
<th>Date Transaction Number</th>
<th>Folio no.</th>
<th>Accounts Involved</th>
<th>Type of Account</th>
<th>Rule applied for Dr. and Cr.</th>
<th>Explanation</th>
<th>A/c to be Debit (Dr.)</th>
<th>A/c to be Credit (Cr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Cash a/c</td>
<td>Real Personal</td>
<td>(Dr) comes in credit the giver</td>
<td>Cash comes in the business and Proprietor is the giver of cash.</td>
<td>Cash a/c Rs. 1000</td>
<td>Capital a/c Rs. 1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capital a/c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Cash a/c</td>
<td>Real Personal</td>
<td>(Dr) Giver * (Cr)</td>
<td>Cash in received from Mr. B.</td>
<td>Cash a/c Rs. 50</td>
<td>Mr. B’s a/c Rs. 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mr. B. a/c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Cash a/c</td>
<td>Real Nominal</td>
<td>Dr. What comes in Cr. All incomes</td>
<td></td>
<td>Cash a/c Rs. 250</td>
<td>Commission a/c Rs. 250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commission a/c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:

In cash transaction Always omit personal accounts.
In credit transaction Always omit cash account.

6.2. PREPARATION OF JOURNAL

A typical journal contains five columns -
1. Date : The date of transaction.
2. Particular : Details of transaction along with Narration.
3. L.F. : Ledger folio Number / page number all which the various accounts appear in the ledger
4. Amount (Dr): Amount to be debited.
5. Amount (Cr): Amount to be Credited.

In addition to the above information, there is also a small narration of the transaction being recorded. Narration always appears in parentheses and always starts by the word “Being”. In journal entries a prefix “To” is applied before the account which is to be credited.
## Journal Entries for the Transactions Mentioned in illustration 6.1

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>L. F</th>
<th>Amount (Dr)</th>
<th>Amount (Cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| March 1 | Cash a/c Dr  
To capital A/c  
(Being the business Started with cash) | 1000 | 1000        |             |
| 2     | Cash a/c Dr  
To Mr. B's a/c  
(Being the money received from Mr. B.) | 50   | 50          |             |
| 3     | Cash a/c Dr.  
To commission a/c  
(Being the Commission – earned) | 250  | 250         |             |
| 4     | Rent a/c Dr.  
To cash A/c.  
(Being the rent paid) | 50   | 50          |             |
| 5     | Machine A/c Dr.  
To cash a/c  
(Being the purchase of machine) | 500  | 500         |             |
| 6     | Machine A/c Dr.  
To AB and Co. a/c  
(Being Machine purchased on credit from AB and Co.) | 1000 | 1000        |             |
| 7     | Drawing A/c Dr.  
To Cash a/c  
(Being the withdrawal of cash for personal use by proprietor) | 80   | 80          |             |
| 8     | Mahesh’s A/c Dr.  
To Purchase return a/c  
(Being the goods returned to Mahesh) | 200  | 200         |             |
| 9     | Goods A/c Dr.  
To Sales return a/c  
(Being the goods returned by Shyam) | 100  | 100         |             |

### 6.3. COMPOUND JOURNAL ENTRY

Many times it is possible to pass entry a single journal entry for two or more transaction, (of same date) instead of repeating the accounts and passing separate entries. Generally opening and closing entries in a Journal are compound entries. The example of a compound entry is:

Transaction : “Started business with Rs. 10,000/-Cash and stock worth Rs. 10,000/-

The Journal Entry is:

- Cash A/c Dr. 10,000/-
- Stock A/c Dr. 10,000/-
- To capital A/c 20,000/-

Another Example : “Purchased Machinery from K. K. and Co., worth Rs. 25,000 and paid Rs.
10,000 cash."

The journal Entry is

Machinery a/c Dr. 25,000/-
To cash a/c 10,000/-
To K. K. and co. a/c 15,000/-
Lesson-7
Preparation of Journal

7.1. First step of accounting procedure:- “preparation of journal”.

Illustration 7.1
Consider the following transactions and pass journal entries for them and then post them into appropriate ledgers of “Wise Traders and Co.”

March
1. Started business with Rs.1,00,000 in Bank, Rs. 20,000 cash
1. Bought shop fittings Rs. 20,000 and a scooter Rs. 30,000, both by cheque.
2. Paid rent by cheque – Rs. 2500
3. Bought goods for resale on credit from “K. K. and Co.,” Rs. 25,000
4. Cash sales worth Rs. 2500
12. Cash sales – Rs. 4,000/-
15. Paid wages of worker – Rs. 500/-. 
   Goods returned to KK & Co. worth Rs. 3000/.
17. Paid to ‘K K and Co.,’ Rs. 15000 by cheque.
19. Bought goods for resale from “RC and Co” on credit – Rs. 12,500
19. Cash Sale - 3500
22. Paid wages to worker in cash Rs. 500
24. Bought stationary Rs. 250 by cash.
25. Cash sales Rs. 7500
27. Paid “RC and Co.” Rs. 7000 by cheque
29. Paid wages to worker Rs. 500.
31. Deposited Rs. 10,000 into bank.

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>L.F. No.</th>
<th>Amount (Dr.)</th>
<th>Amount (Cr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1</td>
<td>Bank a/c Dr.</td>
<td>1,00,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cash a/c Dr.</td>
<td></td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To capital a/c</td>
<td></td>
<td></td>
<td>1,20,000</td>
</tr>
<tr>
<td></td>
<td>(Being the business started with given capital)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Furniture and Fittings a/c Dr.</td>
<td></td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scooter a/c Dr.</td>
<td></td>
<td>30,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To bank a/c</td>
<td></td>
<td></td>
<td>50,000</td>
</tr>
<tr>
<td></td>
<td>(Being the purchase of fittings and scooter by cheque)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Rent a/c Dr.</td>
<td></td>
<td></td>
<td>2500</td>
</tr>
<tr>
<td>Date</td>
<td>Particular</td>
<td>L.F.</td>
<td>Amount Dr.</td>
<td>Amount Cr.</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------</td>
<td>------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>19</td>
<td>Goods Ac</td>
<td>Dr</td>
<td>12500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To RC and Co Ac</td>
<td></td>
<td></td>
<td>12500</td>
</tr>
<tr>
<td></td>
<td>(Being goods brought on credit)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Cash Ac</td>
<td>Dr</td>
<td>3500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Sales Ac</td>
<td></td>
<td></td>
<td>3500</td>
</tr>
<tr>
<td></td>
<td>(Being cash sales)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Wages Ac</td>
<td>Dr</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Cash Ac</td>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Being wages paid in cash)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Stationary Ac</td>
<td>Dr</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Cash Ac</td>
<td></td>
<td></td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>(Being stationery bought by cash)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Cash Ac</td>
<td>Dr</td>
<td>7500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Sales Ac</td>
<td></td>
<td></td>
<td>7500</td>
</tr>
<tr>
<td></td>
<td>(Being cash sales)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>RC and Co Ac</td>
<td>Dr</td>
<td>7000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Bank Ac</td>
<td></td>
<td></td>
<td>7000</td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Account</td>
<td>Debit</td>
<td>Credit</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------</td>
<td>-------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>29</td>
<td>Wages paid to 'RC and Co by cheque'</td>
<td>Wages Ac</td>
<td>Dr</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To Cash Ac</td>
<td></td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>(Being wages paid in cash)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Bank deposited in to bank</td>
<td>Bank Ac</td>
<td>Dr</td>
<td>10000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To Cash Ac</td>
<td></td>
<td>10000</td>
</tr>
<tr>
<td></td>
<td>(Being Cash deposited in to bank)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson-8
Posting in Ledgers and Balancing the Ledgers

8.1. INTRODUCTION
A ledger is represented by a “T” account. Separate T accounts (or ledgers) are prepared for each and every account maintained by the company. For example, we may have T accounts for cash, Mr. B.&company, Rent

8.2. LEDGER POSTING
After preparing a separate ledger for each account, one has to refer to the journal entries. After locating any transaction affecting the given account in the journal, that journal entry (along with its date, amount, and credit/debit effect) is to be posted in the ledger. This is called Ledger-posting. The entry to be posted in the ledger contains all information such as date, Amount (Dr.) or Amount (Cr.), Journal Folio no., and the name of the corresponding account to be written in the “particulars” column.

While transferring the journal entry into the ledger, it is to be remembered that the account (ledger) which is credited in the journal, is written in the debit side of the ledger which is debited in the journal entry and vice-versa. Similarly, the names of accounts which appear on the debit side of any ledger always contain a prefix “To” whereas the names of accounts which appear on the credit side of any ledger always contain a prefix “By”.

8.3. BALANCING A LEDGER
The steps for balancing a given ledger are as follows:-

a. First the total of both (debit and credit) sides of the ledger account are done.

b. If the debit side is greater than credit side by say Rs. 100, then the “difference amount i.e Rs.100” is put into the credit side by passing an entry “By balance c/d” Rs.100. By doing so, both the sides of the account become equal. The last step is to transfer the amount written in “by balance c/d” to other side of the account (below the total line) by writing “to balance b/d”. This becomes the opening entry for the next accounting period.

c. If the credit side is greater than debit side, then the “difference amount” is put into the debit side by passing an entry “To balance c/d”. By doing so, both the sides of the account become equal. The last step is to transfer the amount written in “To balance c/d” to other side of the account (below the total line) by writing “By balance b/d”. This becomes the opening entry for the next accounting period.

d. Note: only real and personal accounts are to be balanced. Nominal accounts are generally not balanced rather at the end of the accounting period; their totals are transferred to Profit and loss account.

Illustration 8.1
Consider the data given in illustration 7.1 and prepare the individual ledger Account from the journal entries.

<table>
<thead>
<tr>
<th>Dr</th>
<th>Cash A/c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Particulars</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To Capital A/c</td>
<td>20000</td>
<td></td>
<td>8</td>
<td>By wages A/c</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>To Sales A/c</td>
<td>2500</td>
<td></td>
<td>15</td>
<td>By wages A/c</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>To Sales A/c</td>
<td>4000</td>
<td></td>
<td>22</td>
<td>By wages A/c</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>To Sales A/c</td>
<td>3500</td>
<td></td>
<td>24</td>
<td>By Stationary A/c</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>To Sales A/c</td>
<td>7500</td>
<td>29</td>
<td>By wages A/c</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>By Bank A/c</td>
<td>10000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>By Balance C/d</td>
<td>25250</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>37500</td>
</tr>
<tr>
<td>1.04</td>
<td>To Balance B/d</td>
<td>25250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Capital A/c**

<table>
<thead>
<tr>
<th>Dr</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
<th>Cr</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>To Balance C/d</td>
<td>12000</td>
<td>1</td>
<td></td>
<td>By Bank A/c</td>
<td>10000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>By Cash A/c</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>12000</td>
<td></td>
<td>12000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.04</td>
<td></td>
<td>By Balance B/d</td>
<td>12000</td>
<td></td>
</tr>
</tbody>
</table>

**Bank A/c**

<table>
<thead>
<tr>
<th>Dr</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
<th>Cr</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To Capital A/c</td>
<td>10000</td>
<td>2.03</td>
<td></td>
<td>By furniture and fitting A/c</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>To Cash A/c</td>
<td>10000</td>
<td>2.03</td>
<td></td>
<td>By Scooter A/c</td>
<td>30000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.03</td>
<td></td>
<td>By rent A/c</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td>By insurance A/c</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td></td>
<td>By KK and Co A/c</td>
<td>15000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td></td>
<td>By Balance C/d</td>
<td>35250</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>110000</td>
<td></td>
<td>110000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.04</td>
<td>To Balance B/d</td>
<td>35250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Two Wheeler A/c

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>To Bank A/c</td>
<td></td>
<td>30000</td>
<td>31</td>
<td>By Balance C/d</td>
<td></td>
<td>30000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.04</td>
<td>To Balance B/d</td>
<td></td>
<td>30000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rent A/c

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>To Bank A/c</td>
<td></td>
<td>2500</td>
</tr>
</tbody>
</table>

### Goods A/c

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.03</td>
<td>To KK and Co A/c</td>
<td></td>
<td>25000</td>
</tr>
<tr>
<td>19.03</td>
<td>To RC and Co A/c</td>
<td></td>
<td>12500</td>
</tr>
</tbody>
</table>

### KK and Co A/c

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.03</td>
<td>To Returns Outward A/c</td>
<td></td>
<td>3000</td>
</tr>
<tr>
<td>3.03</td>
<td>By Goods A/c</td>
<td></td>
<td>25000</td>
</tr>
<tr>
<td>17.03</td>
<td>To Bank A/c</td>
<td></td>
<td>15000</td>
</tr>
<tr>
<td>31.03</td>
<td>To Balance C/d</td>
<td></td>
<td>7000</td>
</tr>
</tbody>
</table>

### Sales A/c

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>J.F.</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.03</td>
<td>By Cash A/c</td>
<td></td>
<td>2500</td>
</tr>
<tr>
<td>12.3</td>
<td>By Cash A/c</td>
<td></td>
<td>4000</td>
</tr>
<tr>
<td>19.3</td>
<td>By Cash A/c</td>
<td></td>
<td>3500</td>
</tr>
<tr>
<td>25.3</td>
<td>By Cash A/c</td>
<td></td>
<td>7500</td>
</tr>
</tbody>
</table>

### Wages A/c

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Trial Balance (Net Balance Method)

After preparing the individual ledger Accounts from the journal entries in the above manner, and balancing or closing the Accounts, the next step is to prepare a trial balance. A trial balance is prepared by listing various debit balance Account in one column and all the credit balance Account in another column and checking the total of both the columns. If the total in both – the debit column and credit column is same, then we can say that the trial balance agrees and there does not seem to a any arithmetical error in the Accounts. Such a trial balance prepared from after balancing the individual ledgers (i.e after ascertaining the net debit or credit balance in a ledger) is called a trial balance by Net Balance method.

#### 8.4.1. Trial Balance (Net Balance Method)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Account</th>
<th>Debit Balance</th>
<th>Credit Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cash A/c</td>
<td>25250</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Amount</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Capital A/c</td>
<td>120000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Bank A/c</td>
<td>35250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Furniture and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fitting A/c</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scooter (Two-wheeler A/c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Wheeler A/c</td>
<td>30000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Rent A/c</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Goods A/c</td>
<td>37500</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ZK and Co A/c</td>
<td>7000</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sales A/c</td>
<td>17500</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Wages A/c</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Insurance A/c</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Returns Outward</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>A/c</td>
<td>3000</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>RC and Co A/c</td>
<td>5500</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Stationary A/c</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>153000</strong></td>
<td></td>
</tr>
</tbody>
</table>
Lesson-9
Subsidiary book - Cash Book

9.1. INTRODUCTION

Now, we will see how we can use other subsidiary books to reach to the step 3 (trail balance) of accounting procedure.

Use of Journal

When the business is a small one and the number of transactions are very less, then even by a single person. All the transactions can be entered into the journal.

Use of subsidiary books along with the journal:

When the number of transactions are more then there was to be division of work. The division of work can be done by looking into the nature of 'transactions' that take place in a normal business. Therefore, a journal is classified into

1. General journal

The Special journal or subsidiary books are of 7 types:-

1. Cash book
2. purchase book
3. sales book
4. Purchase return book
5. Sales return book
7. Bills Payable book

The journal and subsidiary books are used according to the following

Subsidiary Books

<table>
<thead>
<tr>
<th></th>
<th>Cash Book</th>
<th>It is used to record all the cash transactions of the firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Purchase Book</td>
<td>It is used to record all the credit purchases of the goods dealt-in by the firm. Also called purchase-day-book.</td>
</tr>
<tr>
<td>3</td>
<td>Sales Book</td>
<td>It is used to record all the credit sales of the goods dealt in by the firm. It is also called the sales day book.</td>
</tr>
<tr>
<td>4</td>
<td>Purchase Return Book Or Returns outward Book</td>
<td>To record the returns of all the goods which were previously bought-on-credit by the firm. Goods may be returned on the basis of variety of reasons such as – defective goods, excess quantity etc.</td>
</tr>
<tr>
<td>5</td>
<td>Sales – Return book or Returns inward Book</td>
<td>To record the sales – return (of credit sales)</td>
</tr>
<tr>
<td>6</td>
<td>Bills Receivable book</td>
<td>To record bills receivable</td>
</tr>
<tr>
<td>7</td>
<td>Bills payable book</td>
<td>To record bills payable.</td>
</tr>
<tr>
<td>8</td>
<td>General Journal Journal Proper</td>
<td>To record all the residual type of transaction. (e.g. – opening, closing, transfer, adjustment,</td>
</tr>
</tbody>
</table>
rectification or all those entries. Which are not recorded into any of the subsidiary books above).

All the subsidiary books are discussed in detail in the following:

1. Cash Book:
   Many transactions of a given organization are cash-based in nature (i.e. they involve cash-payment or cash-receipt). A cash-book is prepared which records all (every kind) cash transactions which occur in the business.

   Feature of Cash Book
   a) Only cash transactions are recorded.
   b) It also represents the cash account (No need to prepare a separate cash account)
   c) The cash book is prepared in the form of "T" account. The left hand side of "T" account is called the "debit side" and all the cash receipts are entered on debit side, therefore, it is also called the Receipt side. The Right-hand side of the cash account is called the "Credit side" and all the payments are entered.
   d) It serves the purpose of cash account.

Different types of cash book maintained by a business firms are:
   a) Simple cash book
   b) Cash book with Discount and Cash column.
   c) Cash book with Discount, cash and Bank columns
   d) Petty cash book (for petty expenses)

i. Simple Cash Book

   The format / specimen of a simple cash book are as shown below.

   | Dr. Date | Receipts R.No. | Cash Book Amount (Rs) | Cr. Date | Payments V.No. L.F. Amount (Rs) |
   |---------|-------------|---------------------|---------|----------------|-------------------|
   |         |             |                     |         |                |                   |
   |         |             |                     |         |                |                   |
   |         |             |                     |         |                |                   |

   All items are self-explanatory, except;

   R.No. = Receipt No. - Every receipt is recorded in a receipt book, and the Receipt No. is used as a reference.

   V.No. = Voucher No. - All payments are made by a payment voucher, therefore every payments was a voucher number for its reference.

Illustration:

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 June 1</td>
<td>Opening balance cash in hand</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>Cash sales</td>
<td>1500</td>
</tr>
<tr>
<td>2</td>
<td>Cash purchases</td>
<td>750</td>
</tr>
<tr>
<td>4</td>
<td>Received from Shyam</td>
<td>1250</td>
</tr>
<tr>
<td>8</td>
<td>Deposited into bank</td>
<td>500</td>
</tr>
<tr>
<td>10</td>
<td>Purchased goods</td>
<td>250</td>
</tr>
<tr>
<td>12</td>
<td>Sold goods</td>
<td>700</td>
</tr>
</tbody>
</table>
Example of simple cash book.

<table>
<thead>
<tr>
<th>Dr.</th>
<th>Receipts</th>
<th>R.No.</th>
<th>L.F.</th>
<th>Amount (Rs)</th>
<th>Date</th>
<th>Payments</th>
<th>V.No.</th>
<th>L.F.</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>2005</td>
<td>01-Jun</td>
<td>To Balance b/d</td>
<td>100</td>
<td>02-Jun</td>
<td>By Purchase A/c</td>
<td>750</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-Jun</td>
<td>To Sales A/c</td>
<td>1500</td>
<td>08-Jun</td>
<td>By Bank A/c</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04-Jun</td>
<td>To shyam's A/c</td>
<td>1250</td>
<td>10-Jun</td>
<td>By Purchase A/c</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-Jun</td>
<td>To Sales A/c</td>
<td>700</td>
<td>15-Jun</td>
<td>By Stationary A/c</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-Jun</td>
<td>To Bank A/c</td>
<td>8000</td>
<td>22-Jun</td>
<td>By Purchase A/c</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-Jun</td>
<td>By wages A/c</td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-Jun</td>
<td>By rent A/c</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-Jun</td>
<td>By mukesh's A/c</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-Jun</td>
<td>By Gungan's A/c</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-Jun</td>
<td>By Balance c/d</td>
<td>6050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ii. Cash Book with Discount and Cash Columns
Here, it is imperative to understand the "discount" which is used in the context of a cash book.

Generally there are two types of discounts:

A. Trade Discount:
It is a discount which is allowed by the manufacturer/ wholesaler to the retailer. It is deducted from the catalogue price. It is not recorded for the purpose of accounting. (Only the net amount after such discount is entered in the books of account).

B. Cash Discount:
In several cases, in which the business firm has to receive money from its credit customers or debtors etc, it is possible that these parties may delay/postpone/extend the payment of money. In such situations, in order to expedite the receipt of money, the business firm may offer a discount, called "cash discount" to customers who pay their dues "before a certain pre specified date". This discount availed by the customer/ debtor is recorded for accounting purpose and entered in the books of accounts. (It is clear that a cash discount is conditional, it may or may not be availed by the customer.)

Consider the following illustration:

<table>
<thead>
<tr>
<th>Date</th>
<th>Receipts</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1</td>
<td>Balance of Cash-in-hand</td>
<td>12000</td>
</tr>
<tr>
<td>March 2</td>
<td>Received from Mahesh Rs 600 and allowed him a discount 40</td>
<td></td>
</tr>
<tr>
<td>March 3</td>
<td>Purchased a printer for Rs. 450</td>
<td></td>
</tr>
<tr>
<td>March 10</td>
<td>Purchased goods by cash</td>
<td>1000</td>
</tr>
</tbody>
</table>
### Cash Book with column of Discount and Cash

<table>
<thead>
<tr>
<th>Dr.</th>
<th>Date</th>
<th>Receipts</th>
<th>R. No.</th>
<th>L.F.</th>
<th>Discount (Rs)</th>
<th>Amount (Rs)</th>
<th>Date</th>
<th>Payments</th>
<th>V. No.</th>
<th>L.F.</th>
<th>Discount (Rs)</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>01-Jun</td>
<td>To Balance B/d</td>
<td></td>
<td></td>
<td>12000</td>
<td>03-Jun</td>
<td>By Printer A/c</td>
<td>450</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02-Jun</td>
<td>To Mahesh's A/c</td>
<td>40</td>
<td>600</td>
<td></td>
<td>10-Jun</td>
<td>12-Jun</td>
<td>By Gagandeep's A/c</td>
<td>80</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-Jun</td>
<td>To Sales A/c</td>
<td>6000</td>
<td>12-Jun</td>
<td></td>
<td>18-Jun</td>
<td>By Postage A/c</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-Jun</td>
<td>To Shyam's A/c</td>
<td>25</td>
<td>875</td>
<td></td>
<td>Jun-31</td>
<td>By Wages A/c</td>
<td>800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-Jun</td>
<td>To Jayesh's A/c</td>
<td>8</td>
<td>160</td>
<td></td>
<td>Jun-31</td>
<td>By Balance C/d</td>
<td>16365</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-Jun</td>
<td>To balance b/</td>
<td>16365</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19635</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note: Discount Account**

The discount column in a cash book are not balanced, rather the amounts are simply transferred to the debit and credit side of the discount account.

### CASH BOOK WITH DISCOUNT, CASH AND BANK COLUMN:

As the name indicates, there are 3 columns, discount, cash and Bank. The usual method of entering discount and cash is adopted and bank column is also added.

A. Here, one transaction, which is very important is = "Receipt of a cheque" and "Its deposit in Bank Account". In such a case

   a. If cheque is received but not deposited in the same day:
      
      When the cheque is received, it is first entered in the cash-column, and on the next day, when the cheque is deposited in the bank, it is entered in the bank column.
      
   b. If the cheque is received and banked on the same day:
      
      Then, it is directly shown as a receipt in the Bank Column.

B. Contra Entry:

   a. An entry which involves, cash a/c and Bank a/c only, then it is called a contra entry. There are three types of contra entry.

   b. cash deposited into Bank

   c. Cash withdrawn from Bank

   d. Cheque deposited in Bank as in case (A) above.

"C" – Symbol used for contra entry.

**Illustration**

Prepare a three column book from the following information:

<table>
<thead>
<tr>
<th>2008 June</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cash – in – hand</td>
<td>500</td>
</tr>
<tr>
<td>1 Cash – at- bank</td>
<td>20000</td>
</tr>
<tr>
<td>4 Received from suresh</td>
<td>29100</td>
</tr>
<tr>
<td>Discount allowed to him</td>
<td>100</td>
</tr>
<tr>
<td>6 Purchase of goods by bank</td>
<td>7500</td>
</tr>
<tr>
<td>8 Deposited into bank</td>
<td>1400</td>
</tr>
<tr>
<td>11 Credit sales to vikas</td>
<td>210</td>
</tr>
</tbody>
</table>
Financial Management & Cost Accounting

12. Received cheque from Vikas and deposited in bank at same day 210

14. Cash sales 3000

15. Paid to Gagan by cheque for full settlement of his account of 3000

16. Cash purchases 1500

17. Withdrawn from bank for office expanses 4000

18. Paid cash to Jayesh discount allowed from him 555 45

20. Received a cheque from Sukumar 10000

21. Deposited the cheque received from Sukumar into bank

22. Received a cheque from Subhash and sent to bank 2000

30. Paid rent by cheque 200

30. Paid salaries 600

### Cash Book with 3 Columns – Discount, Cash and Bank.

**Points to remember**
1. All credit transactions are to be ignored.
2. ‘C’ denotes contra entries.

<table>
<thead>
<tr>
<th>Dr.</th>
<th>Date</th>
<th>Receipts R.No.</th>
<th>L.F.</th>
<th>Discount (Rs)</th>
<th>Cash Rs</th>
<th>Bank Rs</th>
<th>Date</th>
<th>Payments V.No.</th>
<th>L.F.</th>
<th>Discount (Rs)</th>
<th>Cash Rs</th>
<th>Bank Rs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun-01</td>
<td>To Balance b/d</td>
<td></td>
<td>500</td>
<td>20000</td>
<td>6</td>
<td>By purchase a/c</td>
<td>7500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>To Suresh’s a/c</td>
<td></td>
<td>100</td>
<td>2900</td>
<td>8</td>
<td>By Bank a/c</td>
<td>C</td>
<td>1400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>To Cash a/c</td>
<td>C</td>
<td>1400</td>
<td>15</td>
<td>By Gagan’s a/c</td>
<td>60</td>
<td>2940</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>To Vikas’ a/c</td>
<td></td>
<td>210</td>
<td>16</td>
<td>By purchase a/c</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>To Sales a/c</td>
<td></td>
<td>3000</td>
<td>17</td>
<td>By cash a/c</td>
<td>C</td>
<td>4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>To Bank a/c</td>
<td>C</td>
<td>4000</td>
<td>18</td>
<td>By Jayesh’s a/c</td>
<td>45</td>
<td>555</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>To Sukumar’s a/c</td>
<td></td>
<td>10000</td>
<td>21</td>
<td>By Bank a/c</td>
<td>C</td>
<td>10000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>To Cash a/c</td>
<td>C</td>
<td>10000</td>
<td>30</td>
<td>By Rent a/c</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>To Subhash’s a/c</td>
<td></td>
<td>2000</td>
<td>30</td>
<td>By salary a/c</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>By Balance c/d</td>
<td>445</td>
<td>24870</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul-01</td>
<td>By balance b/d</td>
<td></td>
<td>445</td>
<td>24870</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Petty Cash Book:**

Petty means “small” in all business firms generally all the payments are made by cheque and receipt are banked. But still there are same payments for e.g. Payments for expenses such as stationary, postage, tea, refreshment, cartage etc. which are “small”
frequent and impractical to be paid through cheques. Moreover, the head cashier may be overburdened of the makes payments of their expenses by cheque. In order to remove this incontinence, a separate book called “petty cash book” is prepared, which is to be maintained by a petty cashier.

A petty cash book is similar to a cash book, but it is a multi-columnar book, and all expenses can be recorded under variables suitable heads of expenditure. The petty cashier received money from the head cashier/main cashier. This sum is retailed into the petty cash book where as all the petty expenses are credited there in.

Imprest system of petty cash:

In this method a fixed amount of money, for a fixed period, is allocated to the petty cashier to meet the petty expenses. At the end of the given period, the petty cashier submits the account to the main cashier who checks and verifies them. After that, the main cashier gives exactly the same amount which is spent for petty expenses to the petty cashier. So, that petty cashier again the new period with the same opening figures.

Illustration:-

ABC machines a multi column petty cash book on the interest systems. The interest amount is Rs. 1000 ended on 26th June 2005.

<table>
<thead>
<tr>
<th>June</th>
<th>Particulars</th>
<th>Amt Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>Balance in hand</td>
<td>Rs. 80</td>
</tr>
<tr>
<td>21.</td>
<td>Received cash to make up the interest</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Stationery</td>
<td>Rs. 75</td>
</tr>
<tr>
<td>23.</td>
<td>Postage</td>
<td>Rs. 120</td>
</tr>
<tr>
<td>23.</td>
<td>Entertainment</td>
<td>Rs. 35</td>
</tr>
<tr>
<td>24.</td>
<td>Travelling expenses</td>
<td>Rs. 40</td>
</tr>
<tr>
<td>24.</td>
<td>Miscellaneous expenses</td>
<td>Rs. 25</td>
</tr>
<tr>
<td>24.</td>
<td>Repairs</td>
<td>Rs. 30</td>
</tr>
<tr>
<td>24.</td>
<td>Entertainment</td>
<td>Rs. 19</td>
</tr>
<tr>
<td>25.</td>
<td>Postage stamps</td>
<td>Rs. 20</td>
</tr>
<tr>
<td>25.</td>
<td>Entertainment</td>
<td>Rs. 10</td>
</tr>
<tr>
<td>25.</td>
<td>Stationary</td>
<td>Rs. 50</td>
</tr>
<tr>
<td>26.</td>
<td>Postage stamps</td>
<td>Rs. 10</td>
</tr>
</tbody>
</table>

Analytical Petty cash book

<table>
<thead>
<tr>
<th>Date</th>
<th>V.No</th>
<th>Particulars</th>
<th>Total Payments(Rs)</th>
<th>Postage (Rs.)</th>
<th>Printing and Stationery (Rs.)</th>
<th>Travelling and Conveyance(Rs.)</th>
<th>Entertainment (Rs.)</th>
<th>Repairs (Rs.)</th>
<th>Miscellaneous(Rs.)</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-</td>
<td>21</td>
<td>To Balance b/d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>To cash a/c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>By stationery a/c</td>
<td>75</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Points To Be Considered While Maintaining A Petty Cash Book

In order to exercise control and for proper analysis of petty cash payments, following points should be considered. Amount paid for petty expenses in the form of petty cash should be sufficient only for a short period—e.g., one week or a fortnight.

1. The reimbursement to the petty cashier should be made
   a. Only when the petty cashier prepares a statement showing all petty payment, supported by the “voucher” (i.e., documentary and evidence).
   b. Petty cashier should be given the money only for the actual petty payment made by him.
2. All the vouchers should be filed in order.
3. No disbursement should be made to the petty cashier without proper authorization.
4. Petty-cashier can receive money for petty-expenses only from the main cashier. Petty cashier is not allowed to receive cash from any other source.
10.1. PURCHASE BOOK

A purchase book records all the “credit purchases” of the business firm. The form of purchase book is as follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Name of Supplier</th>
<th>L.F</th>
<th>Inward invoice No.</th>
<th>Amt(Rs.)</th>
</tr>
</thead>
</table>

Here it is important to Note that:

1. Cash-purchases are not entered in this book (Because they are recorded in the cash book).
2. Only “credit purchases” of the “goods dealt in” by the firm are recorded. (i.e. which are meant for resale).

Credit purchases of the goods/materials which are not dealt in by the firm are not recorded in this book.

For example, if a firm purchase by credit- some furniture, computer, any asset etc. then there credit purchases are not recorded in the purchase book, because this are not the goods in which the business firm deals (i.e. these goods are not meant for resale, moreover the firm may not in the business of buying and selling of such furniture, equipments etc.). Hence, as there is no separate book to record such credit purchase, these purchases are to be recorded in the “journal proper”.

**Illustration 10.1**

Consider the following transaction of a furniture showroom and enter them into purchase book and also post them into ledgers.

- **2005**
  - **March 1:** Purchased on credit from 'Vijay furniture, Baroda'
    - 10 Chairs @ Rs.200 per chair
    - 5 tables @ Rs.1000 per table
    - And paid cartage charges Rs.100
  - **March 5:** Purchased from ‘R and C Company, Baroda’
    - 10 steel cabinets @ Rs.2000
    - Delivery charges paid Rs.150
  - **March 10:** Purchased on credit from SFC, Baroda
    - 50 chairs @ Rs.150
    - Less trade discounts @ 10 %
  - **March 11:** Purchase on credit a Type writer for office use from JK and Co.
March 12: Purchased for cash from “Subhash stationery marts”
10 notebooks @ Rs.8 per notebook.

**PURCHASE BOOK**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars (Name of supplier and invoice No.)</th>
<th>L.F</th>
<th>Details</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>Vijay Furniture, Baroda</td>
<td>2000</td>
<td>5000</td>
<td>100</td>
</tr>
<tr>
<td>March 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 chairs @ Rs200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 tables @ Rs.1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cartage charges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invoice No. ______ Dated ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 5</td>
<td>R and C Company, Baroda</td>
<td>20,000</td>
<td>150</td>
<td>20,150</td>
</tr>
<tr>
<td></td>
<td>10 steel cabinets @ Rs.2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cartage charges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invoice No. ______ Dated ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 10</td>
<td>SFC, Baroda</td>
<td>7500</td>
<td>750</td>
<td>6750</td>
</tr>
<tr>
<td></td>
<td>50 chairs @ Rs.150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less: Trade discount 10 %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invoice No. ______ Dated ______</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td>34,000</td>
</tr>
</tbody>
</table>

**NOTE:**

(1) Transaction of 11th March 2005, is ignored because it is a credit purchase of an
item (typewriter) which is not meant for re-sale and it is not an item of normal
business of the firm. It will be recorded in journal proper.

(2) Transaction dated 12th March has been ignored because it is a cash purchase it
will be recorded in cash book.

The entries in the respective ledgers of the supplier and purchase, will be as under-

**LEDGER**

**Vijay Furniture, Baroda**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>Amt.</th>
<th>Date</th>
<th>Particular</th>
<th>Amt.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2005</td>
<td>By purchase</td>
<td>7100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>March 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**R and C Company, Baroda**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>Amt.</th>
<th>Date</th>
<th>Particular</th>
<th>Amt.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2005</td>
<td>By purchase</td>
<td>20,150</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>March 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SFC, Baroda**
SALES BOOK (Also called sales day book)

It is used to record all the “credit sales “of goods in which the firm deals in. Credit sales things other than that goods dealt in by the firm, are not entered in sales book, rather they are entered in “journal proper”. The ruling for sales book is similar to a purchase book, except one thing –in the particulars column.

Consider the following illustration-

Illustration 10.2

From the following data write up the sales day book of “Shyamal Traders”.

June 1: Sold to Prakash Traders 100 bags of tea @ Rs.65 per bag. less trade discount @ 5%.

June 8: Sold to “Rao Traders” 10 bags of milk powder @ Rs.400 per bag. less trade Discount @ 15%.

June 14: Sold old furniture to “M/S Sunil and Co.” On credit Rs.4500

June 15: Sold to “lotus (p) ltd.” 10 bags of sugar @ Rs.2000 per bag less 10% trade Discount.

June 20: Sold 10bags of sugar to “sunflower enterprise” @ Rs.2000 for cash.

SALES DAY BOOK

<table>
<thead>
<tr>
<th>Date</th>
<th>Particular</th>
<th>L.F</th>
<th>Details(Rs.)</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1</td>
<td>Prakash Traders</td>
<td>6500</td>
<td>6175</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit Price</td>
<td>Total</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td>100 bags of Tea @ 65</td>
<td></td>
<td></td>
<td>325</td>
</tr>
<tr>
<td></td>
<td>Less: Trade discount @ 5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Invoice No. ____ Dated____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 8</td>
<td>Rao Traders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 bags of milk powder @ 400</td>
<td></td>
<td></td>
<td>4000</td>
</tr>
<tr>
<td></td>
<td>Less: Trade discount 15%</td>
<td></td>
<td></td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Invoice no. _____ Dated_____</td>
<td></td>
<td></td>
<td>3400</td>
</tr>
<tr>
<td>June 15</td>
<td>Lotus (P) ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 bags of sugar @ 2000</td>
<td></td>
<td></td>
<td>20,000</td>
</tr>
<tr>
<td></td>
<td>Less: Trade discount 105</td>
<td></td>
<td></td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Invoice No. _____ Dated _____</td>
<td></td>
<td></td>
<td>18,000</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td>27,575</td>
</tr>
</tbody>
</table>
|      | (This total is periodically transferred to the “credit side of sales Account”)

✓ These figures are debited to the individual accounts of the respective customers.

10.3. PURCHASE RETURN BOOK (Also called Return Outward Book)

We know that, all the credit purchases of the goods dealt-in by the firm are recorded in the “Purchase Book “But, it is possible that the firm may return some of these goods (purchased on credit), the return of goods to the various reasons such as- defective, damaged or excess quantity etc. We can see that, when credit purchases are made, the transactions are recorded on the “debit side” of purchase account. Similarly, the goods should be returned by “crediting” the purchase account. “But in practise, usually a separate Book, called “purchase return Book” is prepared, Which records all the returns of goods purchased on credit. And the total of this book is periodically transferred to the credit side of purchase account.

Procedure followed at the time of returning the goods by the firm:

1. Preparation of debit note:-
a. Which contains all the information regarding the goods being returned such as quantity, value etc.

b. And, it also specifies the reason for returning the goods

c. It also informs the supplier about the "amount" which is debited to his account as a result of the return of goods.

d. Posting from the purchase book:-

e. The individual entries of the purchase return book are periodically transferred to the “Debit Side” of the suppliers.
Lesson-11

Purchase Return Book, Sales Return Book, Bills payable and Bills receivable books

11.1. PURCHASE RETURN BOOK

It records all the returns made by the company to the suppliers where the goods were purchases on credit basis.

---

**Purchase Return book**
(Return Outward Book)

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Debit Note No.</th>
<th>L.F</th>
<th>Details(Rs.)</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>Upasna electronics</td>
<td></td>
<td></td>
<td>24,000</td>
<td>24,000</td>
</tr>
<tr>
<td>June 1</td>
<td>4 mobiles @ 6000 each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 14</td>
<td>Jayesh mobile center</td>
<td></td>
<td></td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td>June 20</td>
<td>Musik Point</td>
<td></td>
<td></td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>June 25</td>
<td>Modern electronics</td>
<td></td>
<td></td>
<td>8000</td>
<td>7200</td>
</tr>
<tr>
<td></td>
<td>One mobile handset @ 8000</td>
<td></td>
<td></td>
<td>Less Trade discount 10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 memory cards @ 200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>56,200</td>
</tr>
</tbody>
</table>

---

**Return outward Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 30</td>
<td>By sundries as per the return outward book</td>
<td>56,200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Upasna electronics Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1</td>
<td>To Return Outward Account</td>
<td>24,200</td>
</tr>
</tbody>
</table>

---

**Jayesh mobile Center Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 14</td>
<td>To Return Outward Account</td>
<td>5000</td>
</tr>
</tbody>
</table>

---

**Musik Point Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 20</td>
<td>To Return Outward</td>
<td>20,000</td>
</tr>
</tbody>
</table>
11.2. A RETURN INWARD BOOK OR A SALES RETURN BOOK

When sales are made on credit, and recorded in sales Book, by the company, it is also possible that the given customer may return the goods on account of wrong quantity, damage, defects etc. When the goods are returned by these customers, they are recorded in a special book called “Sales Return Book”. The procedure to be followed at the time of accepting the goods, returned by the customers is-

a) Prepare a credit note:
   A note is prepared which indicate the name, code, dimensional etc. of the goods returned by the customers. It also contains the “value” of goods returned by the customers. Further, It indicates that the goods returned by the customer, have been accepted by the company, and subsequently, the customer’s account will be “credited” by the amount of goods returned by him.

b) Posting of sales return Book:
   Clearly, the individual entries of the sales return Book. are “credited” to the respective customers account.(And the total of the sales return book is to be periodically debited to the “sales account”)

The ruling of sales return book is similar follows

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Credit Note No.</th>
<th>L.F</th>
<th>Details(Rs.)</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Consider the following Illustration

**Illustration 11.1**

June 1: returned by “Musik center”

4 pieces of Tape recorder costing Rs.2000 each.

June 14: returned by J.B. electronics

3 Color T.V @ Rs. 15,000 each.

Sales Return Book

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Credit Note No.</th>
<th>L.F</th>
<th>Details(Rs.)</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1</td>
<td>Musik center</td>
<td>8000</td>
<td></td>
<td>8000</td>
<td>8000</td>
</tr>
<tr>
<td></td>
<td>4 pieces of Tape recorder @ 2000 each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 14</td>
<td>J.B. electronics</td>
<td>45,000</td>
<td></td>
<td>45,000</td>
<td>45,000</td>
</tr>
</tbody>
</table>
These figures to be credited to accounts of individual customers and the total figure to be debited to the sales return Account.

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 30</td>
<td>To sundry debtors Account</td>
<td>53,000</td>
</tr>
</tbody>
</table>

Sundry debtors Account

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 30</td>
<td>By sales return Account</td>
<td>53,000</td>
</tr>
</tbody>
</table>

Debtors Ledgers

**Musik center Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1</td>
<td>By sales return Account</td>
<td>8000</td>
</tr>
</tbody>
</table>

**J.B. electronics Account**

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 14</td>
<td>By sales return Account</td>
<td>45,000</td>
</tr>
</tbody>
</table>

11.3. BILLS RECEIVABLE BOOK and BILLS PAYABLE BOOK

**Bills Receivable Book**

Bills receivable books contain all the information regarding the bills of credit sales, in which the sales have been made to the customer, but the customer is yet to pay the bill. Hence, it denotes the bill-outstanding or bill receivable from the customer. In effect, what the customer has done, in that he receives the bill and, puts his stamp and signature on the bill indicating that, he accepts the bill (along with the terms and conditions mentioned there in) and promise to pay the bill by the due date. In practice, however, these are a large number of credit sales (and hence large number of bills to be collected). In order to keep full information regarding the amount of bill, date of acceptance, date of maturity, procedure to be followed in case of default etc. a separate book “Bills Receivable Book” is prepared. The total of the bills receivable book is then periodically transferred to the bills receivable account.

**11.3.1. Bills Payable Book**

As in the case of bills receivable book, we can prepare a bills payable book, which keeps records of all the bills to be paid by the company by the due date. Hence, it records all the bills which are accepted by the company and promised to pay by the company by the due date. The total of the bills payable book is transferred to the bills payable account.
Role of Journal Proper

As we have seen that a business firm generally prepares
a) Cash Book
b) Purchase Book
c) Purchase Return Book
d) Sales Book
e) Sales Return Book
f) Bills receivable Book
g) Bills Payable book

Still, there are some transactions, which may not find a place in any of the books mentioned above. In general, for those transactions, for which no special book is maintained to record them, are then recorded in the Journal Proper. Hence, such transactions have to be journalized. Hence, the Journal is used to record all the "RESIDUAL" entries/transactions of the firm.

Generally, the type of entries to be journalized is as given below:

1) Opening entries:
Opening entries are used, at the beginning of the financial year to open the book, recording the assets and liabilities.

Example:

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Asset Account Dr</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To liabilities account</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Capital account</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Being the opening entry for year...)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) Closing entries:
At, the end of the year, the profit and loss account is to be prepared. It can be prepared by the nominal accounts to profit and loss account, this is done by closing entries. Now days, closing entries are often avoided. The closing is done in the ledger itself and the destination of the final balances is indicated in the ledger itself as: "Transfer to Trading account" or as "transfer to profit and loss account" etc.

3) Rectification entries:
If any error is made, it can be rectified by passing a journal entry.

4) Transfer entries:
If some amount is to be transferred from one account to another account, this is done by recording it in a journal.

5) Adjustment entries:
At the time of preparation of final accounts, certain type of transaction/entries are to be brought into the book.
Examples of such entries are:-

a. Entries for outstanding expenses
b. Entry for prepaid expenses
c. Entry for depreciation
d. Entry for accrued incomes
e. Entry for provision of bad and doubtful debts etc.

6) Entry for dishonor of bills:-
If any, entity which had accepted a bill, but was unable to pay the amount by the due date, a journal entry is used to record the non-payment of bill.

7) Miscellaneous entry:-
   a. Credit purchase (or sale) of goods not dealt in by the firm
      Example: Furniture, Computer, Other assets.
   b. Effect if accidents such as loss of property due to fire.
   c. A debtor becoming insolvent, hence the amount becomes irrecoverable.
Lesson-12

Trial Balance –preparation, limitations and Method of preparing Trial Balance

12.1. TRIAL BALANCE

At the end of the given period, and after posting all the entries from the journal into individual ledger accounts, the ledgers are balanced and their net balances, debit or credit, are determined. One thing to be remembered in the double entry accounting system, is that, for every debit entry, there has to be a corresponding and equal credit entry, and vice versa. Hence, in a journal, the total of debit and credit column must be equal. Extending this logic further, we can also state that after balancing the ledger accounts, the total of ledgers having credit balance should be equal to the sum total of all the debit balance ledgers.

This is the main principle of the trial balance. A trial balance is a summary of various debit balances and various credit balances appearing in the individual ledger accounts. Hence, in short, a trial balance is a sheet which has two columns. In one column, the accounts that have a net debit balance are listed and in the other column, the accounts having net credit entries are listed. As in a double entry book keeping system, the debit column must be equal to the credit column. Therefore, a trial balance is correct if both the columns have the same total.

A trial balance is not a conclusive statement to verify the accuracy of the books of accounts maintained by a firm. However, a trial balance quickly and roughly gives an indication of whether the accounts are arithmetically correct or not. If the total of both the columns of the trial balance do not match, then it indicates that there is at least some kind of arithmetical error in the preparation of the accounts.

Table-12.1. The Ruling of A Trial Balance is as Follows

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Name of the ledger account</th>
<th>net debit balance</th>
<th>net credit balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cash Account</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>2</td>
<td>Capital Account</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>3</td>
<td>Bank Account</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

Looking at the ruling of a trial balance, it can also be seen that, the trial balance can also be prepared by using the total debit balance of a ledger account and the total credit balance in the ledger account. It gives the same result. The trial balance preparation by using the total of the debit side and credit side of the given ledger is known as total method.

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Name of the Ledger Account</th>
<th>Totals method</th>
<th>Net Balance Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total of debit side</td>
<td>Total of credit side</td>
</tr>
<tr>
<td>1</td>
<td>CASH ACCOUNT</td>
<td>80</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>CAPITAL ACCOUNT</td>
<td>--</td>
<td>10000</td>
</tr>
</tbody>
</table>
12.2. ADVANTAGES OF PREPARING A TRIAL BALANCE

a) It proves the arithmetic accuracy of accounting entries in a ledger
b) As it includes each and every account, which is maintained by the firm, it serves as a one place steady reference to view the balances in the ledger accounts.
c) It can detect any error which can then be rectified.
d) It summarizes the result of all the transactions during the period.
e) It provides the base for preparing the final accounts, namely, profit and loss account and balance sheet.

12.3. LIMITATIONS OF A TRIAL BALANCE

(Errors that are not disclosed by the trial balance) Even though if we have a trial balance, which agrees on the debit and the credit column, it may not be able to disclose the following type of errors:
Errors of Principle: If an entry which makes equal debit and credit into two concerned accounts, it will not mean any arithmetic error, because the amount on both sides is equal. But it is possible that the recording of the entry may be fundamentally wrong. For example, purchase of furniture is debited to the purchase account instead of the furniture account.
Compensating Errors: If one particular account is wrongly debited by say Rs 500 less, but at the same time another ledger is credited less by the same amount, then the errors will compensate each other and not shown in the trial balance.
Error of Recording: A Wrong Amount in the Books of Original Entry: As we know the ledger are prepared from the books of original entry. If the recording in the original entry is incorrect, it will not lead to disagreement of trial balance and hence, the error will not be disclosed in the trial balance. For example, a sale of Rs 640 was recorded as 604 in the sales book.
Error of Ommisssion: This means, if any financial transaction was completely forgotten and was not recorded in any of the books, then this error cannot be located in the trial balance. This is so because the entry is missing on both sides of the journal.
Posting into Wrong Accounts: For example, if cash paid to Mahesh was wrongly debited to Maheshwari’s account, it cannot be disclosed in the trial balance. This is so because the amount being credited is equal to the amount being debited. Hence, the trial balance will agree.

12.4. SUSPENSE ACCOUNT

If at the end of the preparation of a trial balance, the total of both the credit and debit columns matches, then it is fine. Otherwise, if there is a disagreement, then attempts are made to identify and locate the errors and rectify them. Even after these efforts, if the trial balance does not agree, then the difference in the trial balance is temporarily transferred to a Suspense Account and the trial balance is tallied and completed. The suspense account automatically gets closed and disappears when the errors are located and rectified in the accounting books.

A few ways of locating errors in the trial balance are as follows:

a) Confirm that the cash balance and the bank balance are correct.
b) Check whether all accounts have been brought to the trial balance or not

c) Confirm that the opening balances have been correctly written in the ledger account.

d) Check the totals of the sundry debtors and the sundry creditor.

e) Compute the difference between the debit and the credit column and then divide it by two.

Then check if the obtained figure appears on either sides of the trial balance, and then verify the corresponding entries’ posting. If it is wrongly posted, say instead of debit, it is credited or vice versa, then it is possible that due to this error, it creates a difference equal to double the amount.

f) Divide the difference by 9, if it is completely divisible, it indicates the possibility of transposition and transplacement error.

12.5. TRANSPOSITION ERROR

If the correct entry is 4582  
And the wrongly written entry is 5482  
Then the difference will be 5482 – 4582 = 900  
This 900 is divisible exactly by 9.  
So this is a transposition error.

12.6. TRANSPLACEMENT ERROR

If the correct entry is 42.8  
And the wrongly written entry is 4.28  
Then the difference is 38.52, which is exactly divisible by 9.  
So, the displacement of figures is called transposition. And, the movement of digits to the left or right of a decimal point is known as transplacement error.

Illustration 12.1

Prepare the trial balance from the ledgers prepared in illustration 8.1

Extracting the net balances from individual ledger accounts, the trial balance has been prepared as follows-

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Account</th>
<th>Debit Balance</th>
<th>Credit Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cash Ac</td>
<td>25250</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Capital Ac</td>
<td></td>
<td>120000</td>
</tr>
<tr>
<td>3</td>
<td>Bank Ac</td>
<td>35250</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Furniture and Fitting Ac</td>
<td>20000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Scooter (Two Wheeler Ac)</td>
<td>30000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Rent Ac</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Goods Ac</td>
<td>37500</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ZK and Co Ac</td>
<td></td>
<td>7000</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Amount</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sales Ac</td>
<td>17500</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Wages Ac</td>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Insurance Ac</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Returns Outward Ac</td>
<td>3000</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>RC and Co Ac</td>
<td>5500</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Stationary Ac</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>153000</strong></td>
<td><strong>153000</strong></td>
</tr>
</tbody>
</table>
13.1. BANK RECONCILIATION STATEMENT

Ideally, there should be no difference between the balance shown by the pass book and the cash book. This will happen only when all the entries are correctly and regularly recorded in both the books. However, this work is very tasking and tedious and it may happen that at times, one or more of the entries would have been missed to be recorded in either of the books. When this happens, there will be a difference in the balance as shown by the two books. The possible reasons for this difference are as follows:

1. **CHEQUES ISSUED BUT NOT YET PRESENTED FOR PAYMENT**: The entry for an issued cheque is made in the cash book as soon as the cheque has been issued. However, the bank shall make the entry of that cheque only when the cheque is presented to the bank for payment. Thus, there will be a gap of some days between the entry in the cash book and in the pass book.

2. **CHEQUES PAID INTO THE BANK BUT NOT YET CLEARED**: As soon as the cheques are sent to the bank, entries are made in the bank column on the debit side of the cash book. But the bank shall credit the customer’s account only when they have received the payment from the bank concerned, that is, when the cheques have been cleared. So, there will be some gap between the depositing of the cheques and the credit given by the bank.

3. **INTEREST ALLOWED BY THE BANK**: If the bank has allowed interest to the customer, then the entry will normally be made in the customer’s account and later shown in the pass book. The customer usually comes to know of the interest by perusing the pass book and only then he makes the relevant entry in the cash book.

4. **INTEREST AND EXPENSES CHARGED BY THE BANK**: The interest charged by the bank and the amount of the bank charges are entered in the customer’s account and later in the pass book. The customer makes the required entry only after he sees the pass book.

5. **INTEREST AND DIVIDEND COLLECTED BY THE BANK**: Sometimes, investments are left with the bank for safe custody; the bank itself sees to it that the interest or the dividend is collected on the due dates.

6. **DIRECT PAYMENTS BY THE BANK**: The bank may be given standing instructions for certain payments such as, insurance premium, etc. In this case also, the customer may come to know of the payment only on seeing the pass book. The entries in the pass book and cash book may be thus on different days.

7. **DIRECT PAYMENT INTO THE BANK BY A CUSTOMER**: If such a payment is received by the bank, it will be entered in the customer’s account and also in the pass book. The account holder may come to know of the amount only when he sees the pass book.

8. **DISHONOUR OF A BILL DISCOUNTED WITH THE BANK**: If the bank is not able to receive payment or promissory notes discounted by it, it will debit the customer’s account together with any charges that may have incurred. The customer will naturally make the entry only when he sees the pass book.

9. **BILLS COLLECTED BY THE BANK ON BEHALF OF THE CUSTOMER**: If the goods are sold, the discount may be sent through the bank. If the bank is able to collect the amount, it will credit the customer’s account. The customer may make the entry only on receiving the pass book.

10. **AN ERROR COMMITTED BY THE BANK**: A bank rarely commits an error, but in case it does, the balance shown in the pass book will naturally differ from that shown in the cash book.
13.2. RECONCILIATION

If none of the above mentioned circumstances exist, the balance shown by the pass book and that shown by the cash book will tally. At the end of each month, the entries and the final balance of both the books should be compared, and if a difference exists, then the reasons for the same should be established.

The chief advantages of bank reconciliation are:

❖ The reconciliation will bring out any errors that may have been committed either in the cash book or in the pass book.

❖ An undue delay in the clearance of cheques will be shown up by the reconciliation.

❖ A regular reconciliation discourages the staff of the customer or even that of the bank from embezzlement. There have been many cases where the cashiers have merely made the entries in the cash book but never deposited the cash in the bank. They were able to get away with it only because of the lack of regular reconciliation.

The reconciliation is made in a statement called a BANK RECONCILIATION.

ILLUSTRATION 13.1

PASSBOOK

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Withdrawals</th>
<th>Deposits</th>
<th>DR. or Cr.</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan-03</td>
<td>By cash</td>
<td>4000</td>
<td></td>
<td>4000</td>
<td>4000</td>
</tr>
<tr>
<td>5</td>
<td>To Farukh .Dealers ltd.</td>
<td>600</td>
<td></td>
<td>3400</td>
<td>1250</td>
</tr>
<tr>
<td>5</td>
<td>To d andC Co.</td>
<td>1250</td>
<td></td>
<td>2500</td>
<td>2150</td>
</tr>
<tr>
<td>11</td>
<td>BY J Jayesh and Co. cheque</td>
<td>350</td>
<td></td>
<td>2500</td>
<td>2260</td>
</tr>
<tr>
<td>13</td>
<td>To Rand G company</td>
<td>1000</td>
<td></td>
<td>1500</td>
<td>2260</td>
</tr>
<tr>
<td>16</td>
<td>By Babu Roy and co cheque</td>
<td>760</td>
<td></td>
<td>2260</td>
<td>2260</td>
</tr>
<tr>
<td>17</td>
<td>By cash</td>
<td>300</td>
<td></td>
<td>2560</td>
<td>2560</td>
</tr>
<tr>
<td>21</td>
<td>To cash</td>
<td>500</td>
<td></td>
<td>2060</td>
<td>2060</td>
</tr>
<tr>
<td>25</td>
<td>BY JRD and Co. Cheque</td>
<td>430</td>
<td></td>
<td>2490</td>
<td>2490</td>
</tr>
<tr>
<td>31</td>
<td>To premium paid as per standing instruction</td>
<td>300</td>
<td></td>
<td>2190</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>To bank charges</td>
<td>50</td>
<td></td>
<td>2140</td>
<td>2140</td>
</tr>
<tr>
<td>31</td>
<td>To interest on G-Sec</td>
<td>200</td>
<td></td>
<td>2340</td>
<td>2340</td>
</tr>
</tbody>
</table>

CASH BOOK

<table>
<thead>
<tr>
<th>Dr.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Receipts</td>
</tr>
<tr>
<td>2008</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>To cash</td>
</tr>
<tr>
<td>11</td>
<td>To J Jayesh and Co. cheque</td>
</tr>
<tr>
<td>16</td>
<td>To Babu Roy and co cheque</td>
</tr>
<tr>
<td>17</td>
<td>To cash</td>
</tr>
<tr>
<td>25</td>
<td>To JRD and Co. Cheque</td>
</tr>
<tr>
<td>26</td>
<td>To Maharjar and com.</td>
</tr>
<tr>
<td>27</td>
<td>To Natwar and sons</td>
</tr>
</tbody>
</table>

Bank reconciliation statement as on 31st Jan 2008

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount (Rs.)</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance as per the passbook</td>
<td>2340</td>
<td>2340</td>
</tr>
<tr>
<td>Add</td>
<td>Amount (Rs.)</td>
<td>Amount (Rs.)</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>cheques paid in but not cleared</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Maharaja and com.</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Natwar and sons</td>
<td>390</td>
<td>1390</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add</td>
<td></td>
<td></td>
</tr>
<tr>
<td>premium paid and Bank charges entered in passbook but not entered in cash book</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheques issued but not presented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BY Nagendra and Co.</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>By Babu Roy and co</td>
<td>750</td>
<td>1500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>interest credited by bank but not entered in cashbook</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance as per cash book</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2380</td>
<td></td>
</tr>
</tbody>
</table>

Bank reconciliation statement as on 31st Jan 2008

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount (Rs.)</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance as per cash book</td>
<td></td>
<td>2380</td>
</tr>
<tr>
<td>add</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cheque issued but not yet presented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BY Nagendra and Co.</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>By Babu Roy and co</td>
<td>750</td>
<td>1500</td>
</tr>
<tr>
<td>add</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest in pass book but not yet in the cash book</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cheques paid in but not yet credited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Maharaja and com.</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Natwar and sons</td>
<td>390</td>
<td>1390</td>
</tr>
<tr>
<td>less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>premium paid and bank charges entered in pass book but not yet in the cash book</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>balance as per pass book</td>
<td></td>
<td>2340</td>
</tr>
</tbody>
</table>


Lesson-14

Capital and Revenue Expenditure

14.1. CAPITAL & REVENUE EXPENDITURE

It is very important to know and understanding the distinction between “capital” and “revenue”. It is important because after the trial balance is prepared. The final account can be prepared. The final account can be prepared in such a way that all the account is appearing in the trial balance are either transferred to the “P and L” account or “Balance Sheet”.

Generally, all the nominal accounts or revenue accounts are transferred to the P and L account, while all the real and personal accounts (capital accounts) are to transfer to balance sheet. Here one point arises which cause a lot of importance- it is whenever an expenditure is incurred, it may be treated as an expense (and transferred to as an asset( transferred to balance sheet)

The correct identification of revenue expenditure and capital expenditure is very necessary because wrong allocation of a revenue item to capital item (and vice versa) can create wrong financial statements.

For example a computer is purchased for Rs. 40,000 and is debited to office expenses and transferred to P and L account, instead of debiting it to an appropriate computer account and transferred computer account to the balance sheet as an asset(capital expenditure). It is clearly an error of principle, how a “capital expenditure” item is wrongly treated as “revenue expenditure”. It leads to incorrect P and L account and incorrect balance sheet.

14.2. CAPITAL EXPENDITURE

It is an expenditure which provides benefits to the company for several future years (or several future accounting periods).

Generally, capital expenditure refers to expenditure involving purchase of plant, machinery, assets, land, vehicles, patents, copy rights etc whose benefits are received for more than one year by the firm.

Expenditure may be identified as a capital expenditure →

1. Expenditure incurred for fixed assets land, building, plant, machinery, cost of installation of lights, fans, cost of erection of plant and machinery.
2. When expenditure, incurred in one year, gives benefit for a number of accounting years.
3. When expenditure is incurred to increase the earning capacity of a business.
4. When expenditure is incurred to improve the present condition of a machine or putting an old asset into working condition.
5. All preliminary expenses incurred before the commencement of the business.
6. Expenditure for the extension of improvement in fixed assets. If due to such expenditure the profit earning capacity of firm increases, the expenditure should be capitalized.

7. Any expenditure which have the effect of increasing “fixed assets” of the company or which have the effect of increasing the capacity, efficiency, life span or economy of operation of an existing fixed assets.

**EXAMPLES OF CAPITAL EXPENDITURE**

2. Cost of manufacture, purchase of furniture etc.
3. Purchase of vehicle, cars, vans etc.
4. Cost of good will, trademark, copyrights etc.
5. Preliminary expenses.

**14.3. REVENUE EXPENDITURE**

Revenue expenditure is that expenditure which is not a capital expenditure. According to Kohler “it is an expenditure charged against operation; a term used to contrast with capital expenditure”. Revenue expenditure is incurred in the current period or in one period of account. The benefit of the revenue expenditure is utilized in that period itself. Revenue expenditure is incurred for the following purpose:

a) All establishment and other expenses incurred in the normal course of business. For instance, administration expenses of a business, expenses incurred in manufacturing and selling products.

b) Expenses incidental to the carrying of a business, the benefit of which is consumed within the accounting period. For instance, Rent, Wages, Salaries, Advertising, Taxes, Insurance etc.

c) Expenditure on goods purchased for resale. For instance, cost of goods purchased or cost of raw materials etc.

d) For maintaining fixed assets in working order. For instance, repairs, renewals and replacement of existing assets, depreciation etc.

These revenue expenditure items appear in Trading and Profit and Loss Account.

**Items of Revenue Expenditure**

1. Expenditure on rent, wages, carriage, salaries, postage, insurance, advertising etc.
2. Interest on loan borrowed for running business.
3. Cost of goods bought for resale.
5. Expenses incurred for maintenance of various assets by way of repairs, renewals and replacement on building, plant, machinery, tools, fixtures, van, car etc. To keep them in the good condition.
6. Depreciation of fixed assets.
7. Taxes and legal expenses.
8. Loss arising from sale of fixed assets.
10. All expenses incurred in the manufacturing and distribution of the products handled.
12. Loss of goods by fire or other reasons.
13. Discounts and allowances.

14.4. DEFINITIONS OF DEPRICAIION

“Depreciation may be defined as the permanent decrease in the value of an asset through wear and tear in use or the passage of time.”

“The Primary meaning of the word depreciation is loss of the value through wear and tear or some other form of material deterioration. The secondary sense of depreciation is the operation of adjusting the book values of assets. As the machines or other assets get old, it is the practice of the Accountant to reduce their values in the books of accounts and it is usual to call this as depreciation.”

Depreciation is an expense or loss involved in using machinery, motor vehicles, tools and other fixed assets in the process of production and has to be provided for; this is done estimating the amount to be written off the value of a particular asset each year and setting this amount against the profits for that year.

14.5. CAUSES OF DEPRICAIATION

1. Wear and Tear

Some assets physically deteriorate due to wear and tear in use. When an asset is constantly used for production, the asset wears out. More and more use of an asset, the greater would be the wear and tear. Physical deterioration of an asset is caused from movement, strain, friction, erosion, etc. For instance, building, machineries, furniture, vehicles, plant etc. The wear is general but primary cause of depreciation.

2. Lapse of time

There are certain assets like leasehold property, patents, copy-right etc. That are acquired for a particular period. After expire of the period, they are rendered useless i.e. their value ceases to exist. Thus their cost is written off over their legal life.

3. Obsolescence

Appearance of new and improved machines results in discarding of old machines. Thus New inventions, change in fashion and taste, market condition, Government policies etc., are the causes to discard the value of an asset. But this is not the cause of depreciation and not depreciation in the real sense. A new machine performs the same function more quickly and cheaply than the existing machine. As such, existing machine may become out of date or outmoded or obsolete.

4. Exhaustion
Some assets are of wasting nature. For instance, quarries, mines, oil-well etc. It is reduction in the value of natural deposits as resource, have been extracted year after year. As such these assets are known as wasting sheets. The coalmine or oil well gets physically exhausted by the removal of its content.

5. Non-use

Machines which are idly lying, becomes less useful with the passage of time. Certain types of machines exposed to weather conditions, may have more depreciation from not using it then from its use.

6. Non-Maintenance

A good maintenance of machines will naturally increase its life. When there is no maintenance, there is more depreciated value. When there is good maintenance, there is longer life to the machines. The long life of machine depends upon good and skilled maintenance.

7. Market Trend

The market price may fluctuate in case of certain assets, for instance, investments in gilt-edged securities. When the prices go down, the concerned assets may depreciate its value. In certain cases, accident causes diminution in the value of assets.

14.6. NEED FOR DEPRECIATION

Depreciation is provided for the assets with a view to achieve the following results:

1. To ascertain the true Working Result

Asset is an important tool on earning revenues. Huge amount are spent for acquisition of assets which are worn out in the process of earning income. Thus, the assets get depreciated in their values, over a period of time due to many reasons explained above. When the values of assets decreases, this loss must be brought into account; otherwise a true working result cannot be considered in arriving the true profit earned during each year. The basic need of depreciation is to ascertain the true income. If depreciation is ignored, the loss that is occurred on respect of fixed assets will be ignored. So, depreciation should be debited to profit and loss account before profit is ascertained.

2. To Ascertain the True Value of Asset

The function of Balance sheet is to show the true and correct view of the state of affairs of a business. If no depreciation is charged and when assets are shown at the original cost year after year, Balance Sheet will not disclose the correct state or affairs of a business.

3. To Retain Funds for Replacement

Assets used in the business need replacement after expiry of their service. It is always not possible to determine the useful life of assets. But, in certain cases, machine often becomes, obsolete long before it wears out because of rapid changes in tastes and technology. It is permanent loss in value of asset. When an asset is continuously used, a time will come when the asset is to be given up and hence its replacement is essential. Therefore, if no depreciation is charged against the profit, during the life time of the asset, it will be very difficult to find cash to replace the asset and if replaced it may cripple resources. Therefore, it is necessary to make provision and create funds to replace such assets, in proper time.
4. To Reduce Tax Liability

Depreciation is a tax deductible expenses. As such, it is permitted by the prevailing taxation laws to be deducted from profit. Consequently, the owner of a business may avail himself of this benefit by charging depreciation to his profit and reducing his tax liability.

5. To present True Position

Financial Position can be studied from the Balance Sheet and for the preparation of the Balance sheet fixed assets are required to be shown at their true value. If assets are shown in the Balance Sheet without any charge made for their use, (that is, depreciation) then their value must have been overstated in the Balance sheet and will not reflect the true financial position of the business. Therefore, for the purpose of reflecting true financial position, it is necessary that depreciation must be deducted from the asset and then at such reduced value may be shown in the Balance sheet.

If depreciation is not accounted for, the profit of the company is overstated, in turn; it is distributed among the shareholders. Thus there is no provision for replacement machine. It must be pointed out that depreciation by itself does not create funds; it merely draws attention to the fact that out of gross revenue receipts a certain amount should be retained to replace the asset used for carrying on activities. The companies Act of 1956 now makes it compulsory to write off depreciation on fixed assets before declaring dividend.

14.7. CONSEQUENCES OF NOT PROVIDING FOR DEPRECIATION

If depreciation is not provided for, the Income Statement and Balance Sheet will not exhibit a true or fair View of the business. Ultimately, it affects the following:

1. Profit will be overstated.
2. Capital employed will be incorrect.
3. Valuation of assets will be understated.
4. Cost of production will be understated.
5. Periodic expenses will be understated.
6. Capital depletion will take place.
7. Net worth will be overstated.
8. Correct sale price of price of products cannot be fixed.
9. No provision for replacement of assets.
10. A true working result cannot be known.

Illustration:

Bright paints company purchased a machinery on 1\textsuperscript{st} January 2000 for Rs. 2000. The rate of depreciation for the machinery is 10\% per annum. On 1\textsuperscript{st} July 2002 the machinery was sold for Rs. 1200/-. Prepare the machinery account.

First method

<table>
<thead>
<tr>
<th>Dr. MACHINERY ACCOUNT</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 2000</td>
<td>Rs.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Second method:
If a machinery account and a provision for depreciation account are maintained then the solution is as shown below

<table>
<thead>
<tr>
<th>YEAR</th>
<th>YEAR</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>Rs.</td>
<td>2000</td>
<td>By Depreciation Account 10% on Rs. 2000</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan-01</td>
<td>To Bank Account</td>
<td>2000</td>
<td>Dec-31</td>
<td>By Balance c/d</td>
<td>1800</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td></td>
<td>2001</td>
<td>By Depreciation Account 10% on Rs. 2000</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan-01</td>
<td>To Balance b/d</td>
<td>1800</td>
<td>Dec-31</td>
<td>By Balance c/d</td>
<td>1600</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td></td>
<td>2002</td>
<td>By Depreciation Account for 6 months</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan-01</td>
<td>To Balance b/d</td>
<td>1600</td>
<td>Jul-01</td>
<td>By Bank Account</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jul-01</td>
<td>By Profit and Loss Account--loss written off</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1600</td>
<td></td>
<td>1600</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Provision for Depreciation account

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Dr.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Rs.</td>
<td>Rs.</td>
</tr>
<tr>
<td>Dec-31</td>
<td>To Balance c/d</td>
<td>200</td>
</tr>
<tr>
<td>2001</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td>Dec-31</td>
<td>To Balance c/d</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>Dec-31</td>
<td>By balance c/d</td>
</tr>
<tr>
<td>2002</td>
<td>2002</td>
<td></td>
</tr>
<tr>
<td>Jan-01</td>
<td>To Balance b/d</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>July-01</td>
<td>By depreciation a/c @ 10% on Rs. 2000 for half year</td>
</tr>
<tr>
<td>July-01</td>
<td>To Machinery a/c Transferred.</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500</td>
</tr>
</tbody>
</table>

500 500
Lesson-15

Introduction and preparation Trading Account

15.1. TRADING ACCOUNT

Trading Account is prepared to know profitability of business by buying and selling or manufacturing and selling. It shows the profit from the main business; buying and selling other than the business isn’t included in Trading Account. It is one kind of ledger account.

NAME OF THE FIRM
TRADING ACCOUNT
for the year ended on 31st December

Dr.  Cr.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount</th>
<th>Particulars</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Opening stock</td>
<td></td>
<td>By Sales less Returns</td>
<td></td>
</tr>
<tr>
<td>To Purchase less return</td>
<td></td>
<td>By Closing Stock</td>
<td></td>
</tr>
<tr>
<td>To Wages</td>
<td></td>
<td>Balancing figure</td>
<td></td>
</tr>
<tr>
<td>To Carriage</td>
<td></td>
<td>Gross loss (transferred to P and L A/c)</td>
<td></td>
</tr>
<tr>
<td>To Freight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Fuel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Stores consumed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Royalty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Manufacturing Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Profit and Loss A/c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balancing figure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Profit (transferred to P and L A/c)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Items Debited to Trading Account

Opening stock

It consists of stock of raw material, work in process, finished goods in hand. The valuation is done based on cost or market price whichever is lower. It is taken from Trial Balance.

Purchase

Purchase is debited to the Trading Account after deducting from Purchase Return. Purchase of raw material, work in process, finished goods is only shown here other purchases are not taken into consideration.
Another way is Net stock = Opening + Purchase - Closing

15.2. Direct Expenses

It includes those expenses which have been made for bringing or manufacturing goods ready for sale.

e.g. Wages, Carriage, Freight, Import duty, Fuel, Power, Light, Storage charges.

Items Credited to Trading Account

15.3. Sales

Sales of goods manufactured /brought is only included after deducting sales return.

15.4. Closing Stock

Closing Stock consist unsold goods which are manufactured or brought for sale.

15.5. ADVANTAGE OF TRADING ACCOUNT

1. The various items of trading can be known separately.
2. Over stocking or under stocking can be known
3. The result of trading can be known separately.
4. The progress can be studied on the basis of gross profit ratio, year by year

Illustration:
The following appeared in the trial balance of a firm:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening stock : Raw material</td>
<td>20000</td>
</tr>
<tr>
<td>Finished Goods</td>
<td>35000</td>
</tr>
<tr>
<td>Purchase</td>
<td>90000</td>
</tr>
<tr>
<td>Sales</td>
<td>175000</td>
</tr>
<tr>
<td>Returns: Purchase</td>
<td>2500</td>
</tr>
<tr>
<td>Sales</td>
<td>1500</td>
</tr>
<tr>
<td>Wages</td>
<td>32500</td>
</tr>
<tr>
<td>Factory Expenses</td>
<td>22500</td>
</tr>
<tr>
<td>Freight : In wards</td>
<td>5000</td>
</tr>
<tr>
<td>Out wards</td>
<td>7500</td>
</tr>
<tr>
<td>At the period of the concerned period the stock on hand were:</td>
<td>17500</td>
</tr>
<tr>
<td>Raw Material</td>
<td>5000</td>
</tr>
<tr>
<td>Work in progress</td>
<td>27500</td>
</tr>
<tr>
<td>Finished Goods</td>
<td></td>
</tr>
</tbody>
</table>

Prepare the Trading Account of the firm.
### Answer

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount (Rs)</th>
<th>Particular</th>
<th>Amount (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Opening Stock:</td>
<td></td>
<td>By Sales: 175000</td>
<td>173500</td>
</tr>
<tr>
<td>Raw Material</td>
<td>20000</td>
<td>Less :Return 1500</td>
<td>17500</td>
</tr>
<tr>
<td>Finished goods</td>
<td>35000</td>
<td>By Closing Stock:</td>
<td>5000</td>
</tr>
<tr>
<td>To Purchases 90000</td>
<td>87500</td>
<td>Raw Materials</td>
<td>27500</td>
</tr>
<tr>
<td>Less Return 2500</td>
<td>32500</td>
<td>Work in process</td>
<td></td>
</tr>
<tr>
<td>To Wages</td>
<td>22500</td>
<td>Finished goods</td>
<td></td>
</tr>
<tr>
<td>To Factor Expenses</td>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Freight Inwards</td>
<td>21000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Gross Profit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>223500</td>
<td></td>
<td>223500</td>
</tr>
</tbody>
</table>
Introduction and Preparation of Profit and Loss Account

16.1. PROFIT AND LOSS ACCOUNT

To ascertain net profit earned or loss suffered during a given period of time, Profit and Loss account need to be prepared. This Profit and Loss account is prepared after ascertaining the gross profit (or gross loss) from the Trading account. The preparation of the profit and loss account starts by writing the gross profit on the credit side; or if there is gross loss it is written on the debit side.

After that all those expenses (and losses) which have not been entered in the Trading Account are written on the debit side and all the Income & gains (other than sales income) are written on the credit side. Finally the balancing figure of this account gives the net profit or net loss for the given period. The net profit or net loss is transferred to the capital account.

While preparing the Profit and loss account care should be taken to include related expenses under one group; and the groups should be based on various functions such as Marketing, administration, selling, financing etc so as to give the reader a correct idea of the profit earned or loss suffered by the firm during the given period.

Format of Profit and loss account

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Gross loss transferred from Trading a/c</td>
<td></td>
</tr>
<tr>
<td>By Gross Profit transferred from Trading a/c</td>
<td></td>
</tr>
<tr>
<td>To management expenses:</td>
<td></td>
</tr>
<tr>
<td>salaries</td>
<td></td>
</tr>
<tr>
<td>By interest received</td>
<td></td>
</tr>
<tr>
<td>rent, rates and taxes</td>
<td></td>
</tr>
<tr>
<td>By discount received</td>
<td></td>
</tr>
<tr>
<td>stationery and printing charges</td>
<td></td>
</tr>
<tr>
<td>By commission received</td>
<td></td>
</tr>
<tr>
<td>Telephone expenses</td>
<td></td>
</tr>
<tr>
<td>By Income form investments</td>
<td></td>
</tr>
<tr>
<td>legal charges and law costs</td>
<td></td>
</tr>
<tr>
<td>By rent</td>
<td></td>
</tr>
<tr>
<td>entertainment expenses</td>
<td></td>
</tr>
<tr>
<td>By miscellaneous income</td>
<td></td>
</tr>
<tr>
<td>Insurance premium</td>
<td></td>
</tr>
<tr>
<td>By net loss transferred to capital account</td>
<td></td>
</tr>
<tr>
<td>general expenses</td>
<td></td>
</tr>
<tr>
<td>Audit fees</td>
<td></td>
</tr>
<tr>
<td>To selling expenses</td>
<td></td>
</tr>
<tr>
<td>Advertising</td>
<td></td>
</tr>
<tr>
<td>salesmen salaries</td>
<td></td>
</tr>
<tr>
<td>Selling commission</td>
<td></td>
</tr>
<tr>
<td>Brokerage</td>
<td></td>
</tr>
<tr>
<td>travelling expenses</td>
<td></td>
</tr>
<tr>
<td>Free samples</td>
<td></td>
</tr>
<tr>
<td>Bad debts</td>
<td></td>
</tr>
<tr>
<td>To Distribution expenses</td>
<td></td>
</tr>
<tr>
<td>warehouse rent</td>
<td></td>
</tr>
<tr>
<td>carriage outward</td>
<td></td>
</tr>
<tr>
<td>warehouse insurance</td>
<td></td>
</tr>
<tr>
<td>Packing expenses</td>
<td></td>
</tr>
<tr>
<td>Delivery van expenses</td>
<td></td>
</tr>
<tr>
<td>To Depreciation:</td>
<td></td>
</tr>
<tr>
<td>Maintenance expenses</td>
<td></td>
</tr>
<tr>
<td>Depreciation of assets</td>
<td></td>
</tr>
<tr>
<td>To Finance expenses</td>
<td></td>
</tr>
<tr>
<td>Discount on bills</td>
<td></td>
</tr>
<tr>
<td>Discount allowed</td>
<td></td>
</tr>
<tr>
<td>Interest on capital</td>
<td></td>
</tr>
</tbody>
</table>
Interest on loans
Loss by fire
To net profit transferred to capital account

16.2. ADVANTAGES OF PROFIT AND LOSS ACCOUNT:

1. The net result –profit or loss , revealed by this account is an index by which progress can be measured.

2. Various expenses can be effectively controlled by comparing various expenses, year by year.

3. Profitability is the basis and helps in planning of action.

Table- 16.1. Difference between Trading and Profit and Loss Account

<table>
<thead>
<tr>
<th>Trading Account</th>
<th>Profit and Loss Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The first section of revenue account is trading account.</td>
<td>1. The second section of revenue account is known as the profit and loss account.</td>
</tr>
<tr>
<td>2. It is prepared to know only the result of trading.</td>
<td>2. It is prepared to know the ultimate result of the business.</td>
</tr>
<tr>
<td>3. It deals with purchasing and manufacturing costs of goods.</td>
<td>3. It deals with administration, selling, distribution expenses etc.</td>
</tr>
<tr>
<td>4. Balance of this account is transferred to profit and loss account.</td>
<td>4. Balance of this account is transferred to capital account.</td>
</tr>
</tbody>
</table>

Illustration

Consider the following data of M/S Natubhai and sons' books of accounts, Its Trial balance as on 31st march 2008 is as follows. Prepare the Final Accounts

Trial Balance

<table>
<thead>
<tr>
<th>Debit balance</th>
<th>Amount(Rs.)</th>
<th>Credit Balance</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock on 1.04.2007</td>
<td>5000</td>
<td>Capital</td>
<td>100000</td>
</tr>
<tr>
<td>Purchases</td>
<td>37500</td>
<td>Bills payable</td>
<td>12500</td>
</tr>
<tr>
<td>Wages</td>
<td>2500</td>
<td>Sundry Creditors</td>
<td>12500</td>
</tr>
<tr>
<td>Fuel and Power</td>
<td>1500</td>
<td>Sales</td>
<td>52750</td>
</tr>
<tr>
<td>Furniture</td>
<td>12500</td>
<td>Bank overdraft</td>
<td>15000</td>
</tr>
<tr>
<td>Machinery</td>
<td>65000</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Cash in hand</td>
<td>7500</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Bank balance</td>
<td>30000</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Salary</td>
<td>7500</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Particulars</td>
<td>Amount(Rs.)</td>
<td>Particulars</td>
<td>Amount(Rs.)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------</td>
<td>--------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>To Opening Stock</td>
<td>5000</td>
<td>By sales a/c</td>
<td>52750</td>
</tr>
<tr>
<td>To Purchases a/c</td>
<td>37500</td>
<td>By closing a/c</td>
<td>12500</td>
</tr>
<tr>
<td>To wages a/c</td>
<td>2500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To fuel and power a/c</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To royalty a/c</td>
<td>1250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To factory rent a/c</td>
<td>1250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Gross profit transferred to P&amp; L account</td>
<td>16250</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>65250</td>
<td></td>
<td>65250</td>
</tr>
</tbody>
</table>

**P and L account for year ended on 31st March 2008**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount(Rs.)</th>
<th>Particulars</th>
<th>Amount(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To salary a/c</td>
<td>7500</td>
<td>By Gross profit transferred to P&amp; L account</td>
<td>16250</td>
</tr>
<tr>
<td>To advertising a/c</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To office expenses a/c</td>
<td>750</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Commission</td>
<td>1250</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To discount 250

To Net profit Transferred to the capital account in the balance sheet 5000

<table>
<thead>
<tr>
<th></th>
<th>Amount(Rs)</th>
<th></th>
<th>Amount(Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>100000</td>
<td>Machinery</td>
<td>65000</td>
</tr>
<tr>
<td>Add Net Profit</td>
<td>5000</td>
<td>Furniture</td>
<td>12500</td>
</tr>
<tr>
<td>Bank overdraft</td>
<td>15000</td>
<td>Bills receivable</td>
<td>7500</td>
</tr>
<tr>
<td>Bills Payable</td>
<td>12500</td>
<td>Sundry Debtors</td>
<td>10000</td>
</tr>
<tr>
<td>Sundry Creditors</td>
<td>12500</td>
<td>Stock in trade</td>
<td>12500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cash in hand</td>
<td>7500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cash in bank</td>
<td>30000</td>
</tr>
<tr>
<td><strong>145000</strong></td>
<td></td>
<td><strong>145000</strong></td>
<td></td>
</tr>
</tbody>
</table>

Balance sheet as on 31st March 2008
Lesson-17

Balance Sheet

17.1. BALANCE SHEET

A Balance Sheet is the one which shows the financial position of the firm in a systematic manner at a given date. The given date means the date at which final accounts are prepared. As we know;

Transaction→ Journal→ Ledger→ Trial balance (Personal, Real and Nominal account)→ Balance Sheet(Real and Personal account). So, only Real and Personal account are recorded in Balance Sheet. It is also known as a statement of Assets and Liabilities.

Function → To show the true picture (performance) of the business on a particular date.

Forms of Balance Sheet

Two forms of balance sheet. As per Companies Act Balance Sheet is in two form Account Form and Report Form

Structure of Balance sheet as per the Companies Act.

<table>
<thead>
<tr>
<th>Account Form</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liabilities</td>
<td></td>
</tr>
<tr>
<td>- Shared capital</td>
<td>Fixed assets</td>
</tr>
<tr>
<td>- Reserves and surplus</td>
<td>Investments</td>
</tr>
<tr>
<td>- Secured loans</td>
<td>Current assets, loans and advances</td>
</tr>
<tr>
<td>- Unsecured loans</td>
<td>Current assets</td>
</tr>
<tr>
<td>- Current liabilities and provisions</td>
<td>Loans and advances</td>
</tr>
<tr>
<td>- Current liabilities</td>
<td></td>
</tr>
<tr>
<td>- Provisions</td>
<td>- Miscellaneous expenditures and losses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Sources of Funds:</td>
</tr>
<tr>
<td>(a) Shareholder’s funds</td>
</tr>
<tr>
<td>(i) Share capital</td>
</tr>
<tr>
<td>(ii) Reserves and surplus</td>
</tr>
<tr>
<td>(b) Loan funds</td>
</tr>
<tr>
<td>(i) Secured loans</td>
</tr>
</tbody>
</table>
17.2. CLASSIFICATION OF ASSETS AND LIABILITIES

ASSETS

Assets are what the business owns, i.e., its properties and possessions for e.g. Cash, Book-Debt, Building, Land, Stock etc. The classification of assets is given as below:

1. **Fixed Assets:** Fixed assets have long life i.e. more than one year, acquired and held permanently in business. They are used for purpose of earning profits and they are not for sale. e.g. Land, machinery. Tangible assets: Which can be seen, touched etc. e.g. Machinery, building Intangible assets: those which cannot be seen and touched and seen e.g. Patent, Trade Mark etc.

2. **Current Assets:** These are assets which can be converted into cash a short period of time. e.g. Cash at bank, debtors, Investment etc.

3. **Fictitious Assets:** These are not real assets and are fictitious in nature. These are unwritten losses or Shares of Debentures, heavy advertisement expenses, etc. Fictitious assets although intangible and hence are worthless items. All such expenses have debit balances and are to be written off through Profit and Loss Account, slowly during future years and unwritten off portion of such expenses appear in Balance Sheet.

4. **Wasting Assets:** Assets that lose value through wear and tear or constant use, for instance, mines, quarries etc. Natural resources like timber – land, mineral, disposits, oil reserves etc, can or use etc. Once coal has been taken out from mine new coal could not be generated so mine is treated as wasted assets.

**Liquid Asset**

Liquid assets are those assets, which can be readily converted into cash. It means convertibility without any appreciable loss of value. e.g. There are four things cash, Bank balance, gold, house for sell and if we arrange in highest liquidity to lowest then cash comes first, then meanwhile bank balance, gold, house for sell.

17.3. LIABILITIES

Liabilities are the amount which a business has to pay. A liability arises when the firm gets benefit or services, promises to pay cash or provide goods and services in future. Most of the liabilities are monetary liabilities it means that they require specific amount of cash as payment. If the payment date extends more than one year the liability is shown at the present value of the future cash outflows. Some liabilities are non-monetary; it means that the firm is expected to
discharge them not by paying cash but by delivering goods or providing services. This type of non monetary liabilities is shown at the amount of cash received rather than the expected cost of good. e.g. A publisher of magazines. They are generally classified according to the period for which they are contracted.

1. **Fixed Liabilities:** All long period liabilities are treated as fixed liabilities whether they are payable to the proprietor or to the outsiders. For instance, debentures, mortgages, long term loans etc.
2. **Current Liabilities:** These are to be redeemed in the near future, usually within a year. These are short period liabilities which are payable within one year. e.g. bank loans, bills payable etc.
3. **Contingent Liabilities:** The liabilities which are not to be considered as liability on the date of the Balance Sheet but they may become liabilities in future due to uncertain events. e.g. A suit pending in the court, any suspected future decision, bills discounted with bank.

Liabilities are also classified by Companies Act as follows

1. **Share capital**
2. **Reserves and surplus**
3. **Secured loans**
4. **Unsecured loans**
5. **Current liabilities and provisions**

These are briefly described as below:

1. **Share capital:** - It includes equity capital which represent contribution of equity share holders (the owners of the firm) and preference capital which represents contribution of preference share holders.
2. **Reserves and surplus:** - It contains retained earnings and non earning items like share premium and capital subsidy.

There are two type of reserves, one is capital reserves which includes items like share premium accounts, revaluation reserves and capital redemption reserves. A capital reserve can not be distributed as dividend to share holder. Second type of reserve is revenue reserve which represents accumulated retained earnings from the profit of the business.

Surplus is the balance in the profit and loss account which has not been appropriated to any particular reserve account.

3. **Secured loans :**-
These loans are used to purchase assets which are mortgaged or kept as a collateral/security. If the borrower is unable to repay the loan then the financer can sell the asset and recover his money.

4. **Unsecured loans:** - In this loan no asset is offered as security or collateral

5. **Current liabilities and provision:** This refers to the expenses outstanding at the end of period and refers to the various provisions made for tax, bad debts.

**17.4. FUNCTIONS OF BALANCE SHEET**

1. Balance sheet helps in knowing past and present position of a firm. It may be called horoscope of the concern.
2. A balance sheet exhibits the true financial position of a firm at a particular date.
3. It is a mirror of business.
4. It provides valuable information to management for taking better decision through ratio analysis.
5. Financial position can be clearly known with the help of balance sheet.

17.5. LIMITATION OF BALANCE SHEET

1. Historical cost of balance sheet does not convey fruitful information.
2. It can not reflect the ability or skill of staff.
3. Different assets are valued to different rules.
4. In inflationary trend if the readers are not experts may mislead.
5. It prepared on historical cost basis. Changes in prices are not considered.
6. Balance sheet has some fictitious assets, which have no market value. Such items are unnecessarily inflate the total value of assets
7. Window-dressing may be done in balance sheet.
8. It is measured in terms of money or money’s worth. This is, only those assets are recorded in it which can be expressed in money.
Lesson-18
Introduction to financial statements

18.1 INTRODUCTION

A financial statement (or financial report) is a formal record of the financial activities of a business, person, or other entity. A financial statement is often referred to as an account. In short financial statements are summaries of monetary data about an enterprise. For a business enterprise, all the relevant financial information, presented in a structured manner and in a form easy to understand, are called the financial statements. There are four basic financial statements:

18.1.1 Balance sheet

It also referred to as statement of financial position or condition, reports on a company's assets, liabilities, and Ownership equity at a given point in time. The balance sheet provides the user with data about available resources as well as the claims to those resources.

18.1.2 Income statement

It also referred to as Profit and Loss statement (or a "P&L"), reports on a company's income, expenses, and profits over a period of time. Profit & Loss account provide information on the operation of the enterprise. These include sale and the various expenses incurred during the processing state. The income statement provides the user with data about the profitability of the enterprise detailing sources of revenue and the expenses which reduce profit.

Analysis of financial statement means finding out the current position of the company through various tools like ratio analysis, fund flow analysis. It also involves comparing the company figures with regard to industry standards or over a period of time.

Financial statement analysis involves careful selection of data from financial statements for the primary purpose of forecasting the financial health of the company. All financial statements are essentially historical documents. They tell what has happened during a particular period of time. However most users of financial statements are concerned about what will happen in the future. Stockholders are concerned with future earnings and dividends. Creditors are concerned with the company's future ability to repay its debts. Managers are concerned with the company's ability to finance future expansion. Despite the fact that financial statements are historical documents, they can still provide valuable information bearing on all of these concerns.

This is accomplished by examining trends in key financial data, comparing financial data across companies, and analyzing key financial ratios.

18.2 Purpose of Financial Statements by Business Entities
The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions. Financial statements should be understandable, relevant, reliable and comparable. Reported assets, liabilities, equity, income and expenses are directly related to an organization's financial position.

Financial statements are intended to be understandable by readers who have "a reasonable knowledge of business and economic activities and accounting and who are willing to study the information diligently."[2] Financial statements may be used by users for different purposes:

a. Owners and managers require financial statements to make important business decisions that affect its continued operations. Financial analysis is then performed on these statements to provide management with a more detailed understanding of the figures. These statements are also used as part of management's annual report to the stockholders.

b. Employees also need these reports in making collective bargaining agreements (CBA) with the management, in the case of labor unions or for individuals in discussing their compensation, promotion and rankings.

c. Prospective investors make use of financial statements to assess the viability of investing in a business. Financial analyses are often used by investors and are prepared by professionals (financial analysts), thus providing them with the basis for making investment decisions.

d. Financial institutions (banks and other lending companies) use them to decide whether to grant a company with fresh working capital or extend debt securities (such as a long-term bank loan or debentures) to finance expansion and other significant expenditures.

e. Government entities (tax authorities) need financial statements to ascertain the propriety and accuracy of taxes and other duties declared and paid by a company.

f. Vendors who extend credit to a business require financial statements to assess the creditworthiness of the business.

g. Media and the general public are also interested in financial statements for a variety of reasons.

18.3 Basis of Comparison

Comparison of financial statements forms the basis for much financial analysis. Four main types of comparison are made:

(1) Comparison of statements for the enterprise between successive years

(2) Comparison of a firm's statements with those of a specific competitor

(3) Comparison of a firm against an industry standard and

(4) Comparison with a target, such as a company's budget.

Comparisons between different organizations may be difficult or even meaningless because of differences in

(1) Size of the organization

(2) Type of organization and
Accounting methods used by the organization.

Often, both the size and type of organization will dictate the kind of accounting methods used. Financial statement analysis is used to identify the trends and relationships between financial statement items. Both internal management and external users (such as analysts, creditors, and investors) of the financial statements need to evaluate a company's profitability, liquidity, and solvency. The most common methods used for financial statement analysis are trend analysis, common-size statements, and ratio analysis. These methods include calculations and comparisons of the results to historical company data, competitors, or industry averages to determine the relative strength and performance of the company being analyzed.

18.4 Users of Financial Statements

The Financial Statement information used by different decision makers differ based on the decision that they make. The major users of the said information are:

1) External users
2) Internal users

18.4.1 External users

The external users of Financial Statements primarily include the investors, creditors or short term and long term lenders. A potential investor is basically interested in his returns in the form of cash dividend as well as the capital gain that he can realize from eventually selling the stock. These returns depend upon how profitable is the company currently and how profitable it will be in future. Therefore, a potential shareholder is interested in the relationships within the company that indicate the present and future profitability of the enterprise and how such profitability could be translated into cash dividend.

A creditor, who supplies goods on credit, is interested in the recovery of the cash during the short period.

The long term creditors such as debenture holders are interested in getting the coupon rate of interest in the short run and recovery of their investment in the long run.

The other interested parties on the company’s performance include the Tax Authorities, Government Agencies,

18.4.2 Internal Users

The internal management gets sizable information on the company from Financial Statements. Their interest comes from two sources. First decision made by external users of financial statements significantly affects the firm in different ways.
Lesson -19
Types of ratios/ liquidity

19.1 INTRODUCTION

Careful financial statement analysis usually means the extraction of meaningful ratios from the statements. These ratios have been classified as measuring (1) **Liquidity** (current ratio, acid-test ratio, etc.) (2) **Activity** (receivables turnover, inventory turnover, etc.) (3) **Profitability** (profit margin on sales, rate of return on assets, earnings per share, etc.) and (4) **Leverage** (debt to total assets, times interest earned, etc.). Ratios are often used to assess performance or as diagnostic tools to point up potential problem areas. Given the extremely varied entities for which financial statements are made -- and even the extreme variation between industries of an entity type -- the most productive use of these ratios is probably made either against industry standards or against ratios for previous years of the entity in question.

19.2 RATIO ANALYSIS

Ratios are useful to indicate various symptoms. Usually those symptoms require more detailed analysis. For example, ratio analysis may reveal an increase in sales volume relative to inventory and receivables. But inventories could have increased less rapidly than sales due to reduced cost of goods, inability to replace inventory items, change in inventory policy or a change in inventory valuation. Receivables could have increased less rapidly than sales because of a more efficient collection policy, a larger proportion of cash sales or a change in policy with regard to the extension of credit. Sales volume could have increased due to plant expansion, an aggressive sales campaign, price increase, price decrease or extension of sales territories. Ratio changes lead managers to ask pointed questions.

19.3 ROLE OF RATIO ANALYSIS IN FINANCIAL MANAGEMENT

The financial statements provide a summarized view of operations of a firm. Various tools are employed in analyzing the financial information. Ratio analysis is one of the tools used.

(1) Ratio analysis simplifies the comprehension of financial statements. Ratio tells the whole story of changes in the financial condition of the business.

(2) Ratio analysis provides data for inter-firm comparison. If highlight the factors associated with successful and unsuccessful firms.

(3) It also makes possible comparison of the performance of the different divisions of the firm.

(4) It helps in planning and forecasting. The purpose of financial mgt to convey an understanding of some financial activities of a business firm.

19.4 LIQUIDITY RATIOS
A class of financial metrics that is used to determine a company's ability to pay off its short-terms debts obligations. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short-term debts.

Common liquidity ratios include the current ratio, the quick ratio and the operating cash flow ratio. Different analysts consider different assets to be relevant in calculating liquidity. Some analysts will calculate only the sum of cash and equivalents divided by current liabilities because they feel that they are the most liquid assets, and would be the most likely to be used to cover short-term debts in an emergency.

A company's ability to turn short-term assets into cash to cover debts is of the utmost importance when creditors are seeking payment. Bankruptcy analysts and mortgage originators frequently use the liquidity ratios to determine whether a company will be able to continue as a going concern.

Investor look at liquidity ratios to determine the ability of a business to pay off its short term obligations from cash or near cash assets to evaluate the risk associated if were to invest in this company. Failure to pay off short term obligation may resulted in financial difficulty or bankruptcy in near future.

Liquidity ratios help investors to minimize the risk in stock market investment to screen out financial sound companies on stock pick to build up their "buy and hold" portfolio.

### Table-19.1: Characterization of cash ratio

<table>
<thead>
<tr>
<th>Cash Ratio</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 1</td>
<td>Dangerous Zone. Very low liquidity.</td>
</tr>
<tr>
<td>1 &lt;</td>
<td>Short term debt can be paid in full with cash and near cash items.</td>
</tr>
<tr>
<td>2 &lt;</td>
<td>Bad management of short term liquidity. Cash could be invested in longer term assets earning a higher return.</td>
</tr>
</tbody>
</table>

**Cash Ratio:** Cash ratio measure the ability of a business to meet short term obligations. It measures to the extent which current obligations can be paid from cash or near cash assets.

**Cash ratio = (Cash and Cash equivalents) / Current Liabilities**

A liquidity ratio measures a company's ability to pay its bills. The denominator of a liquidity ratio is the company's current liabilities, i.e., obligations that the company must meet soon, usually within one year. The numerator of a liquidity ratio is part or all of current assets. Perhaps the most common liquidity ratio is the current ratio, or current assets/current liabilities. Because current assets are expected to be converted to cash within one year, this liquidity ratio includes assets and liabilities of equal longevity. The problem with the current ratio as a liquidity ratio is that inventories, a current asset, may not be converted to cash for several months, while many current liabilities must be paid within 90 days. Thus a more conservative liquidity ratio is the acid test ratio -- (current assets -
Liquidity means ability to clear the current liabilities. The arithmetical expression between the current liabilities and current assets is called liquidity ratio. The ideal ratio is 2:1

**Formula for Liquidity Ratios:**

\[
\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}
\]

\[
\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}
\]

\[
\text{Quick Assets} = \text{Current Assets} - \text{Inventories}
\]

\[
\text{Net Working Capital Ratio} = \frac{\text{Net Working Capital}}{\text{Total Assets}}
\]

Net Working Capital = Current Assets - Current Liabilities
Lesson-20
Capital structure ratio

20.1 INTRODUCTION

The capital structure ratio shows the percent of long term financing represented by long term debt. A capital structure ratio over 50% indicates that a company may be near their borrowing limit (often 65%). The capital structure ratio is included in the financial statement ratio analysis spreadsheets highlighted in the left column, which provide formulas, definitions, calculation, charts and explanations of each ratio.

20.2 MEANING OF CAPITAL STRUCTURE

A mix of a company's long-term debt, specific short-term debt, common equity and preferred equity. The capital structure is how a firm finances its overall operations and growth by using different sources of funds. Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure.

A company's proportion of short and long-term debt is considered when analyzing capital structure. When people refer to capital structure they are most likely referring to a firm's debt-to-equity ratio, which provides insight into how risky a company is. Usually a company more heavily financed by debt poses greater risk, as this firm is relatively highly levered.

Formula to calculate capital structure ratio:
Capital Structure Ratio = Long term debt / (Shareholders equity + Long term debt).

Income Before Interest and Income Tax Expenses = Income before Income Taxes + Interest Expense
Profit Margin = Net Income / Sales
Assets Turnover Ratio = Sales / Averages Total Assets

The external users of Financial Statements primarily include the investors, creditors or short term and long term lenders. A potential investor is basically interested in his returns in the form of cash dividend as well as the capital gain that he can realize from eventually selling the stock. These returns depend upon how profitable is the company currently and how profitable it will be in future. Therefore, a
potential shareholder is interested in the relationships within the company that indicate the present and future profitability of the enterprise and how such profitability could be translated into cash dividend.

Often, both the size and type of organization will dictate the kind of accounting methods used. Financial statement analysis is used to identify the trends and relationships between financial statement items. Both internal management and external users (such as analysts, creditors, and investors) of the financial statements need to evaluate a company's profitability, liquidity, and solvency. The most common methods used for financial statement analysis are trend analysis, common-size statements, and ratio analysis. These methods include calculations and comparisons of the results to historical company data, competitors, or industry averages to determine the relative strength and performance of the company being analyzed.
21.1 MEANING OF ACTIVITY RATIO

Activity ratios measure the efficiency of a company in using its resources. Since most companies invest heavily in accounts receivable or inventory, these accounts are used in the denominator of the most popular activity ratios.

Activity ratios measure company sales per another asset account—the most common asset accounts used are accounts receivable, inventory, and total assets. Activity ratios measure the efficiency of the company in using its resources. Since most companies invest heavily in accounts receivable or inventory, these accounts are used in the denominator of the most popular activity ratios.

Accounts receivable is the total amount of money due to a company for products or services sold on an open credit account. The accounts receivable turnover shows how quickly a company collects what is owed to it.

For a company to be profitable, it must be able to manage its inventory, because it is money invested that does not earn a return. The best measure of inventory utilization is the inventory turnover ratio (aka inventory utilization ratio), which is the total annual sales or the cost of goods sold divided by the cost of inventory.

Using the cost of goods sold in the numerator is a more accurate indicator of inventory turnover, and allows a more direct comparison with other companies, since different companies would have different markups to the sale price, which would overstate the actual inventory turnover.

It shows how much revenue is generated for each dollar invested in assets. Financial ratios which measure how effectively a firm is using its assets. Examples include accounts receivable turnover, asset turnover, and inventory turnover ratios.
21.2 **ACTIVITY RATIO**

An indicator of how rapidly a firm converts various accounts into cash or sales. In general, the sooner management can convert assets into sales or cash, the more effectively the firm is being run.

**Activity Analysis Ratios**

\[
\text{Average Total Assets} = \frac{\text{Beginning Total Assets} + \text{Ending Total Assets}}{2}
\]

**Accounts Receivable Turnover Ratio**

\[
\text{Average Accounts Receivable} = \frac{\text{Beginning Accounts Receivable} + \text{Ending Accounts Receivable}}{2}
\]

**Inventory Turnover Ratio**

\[
\text{Average Inventories} = \frac{\text{Beginning Inventories} + \text{Ending Inventories}}{2}
\]
22.1 MEANING OF PROFITABILITY RATIOS

A class of financial metrics that are used to assess a business’s ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. For most of these ratios, having a higher value relative to a competitor’s ratio or the same ratio from a previous period is indicative that the company is doing well.

Some examples of profitability ratios are profit margin, return on assets and return on equity. It is important to note that a little bit of background knowledge is necessary in order to make relevant comparisons when analyzing these ratios. For instances, some industries experience seasonality in their operations. The retail industry, for example, typically experiences higher revenues and earnings for the Christmas season. Therefore, it would not be too useful to compare a retailer’s fourth-quarter profit margin with its first-quarter profit margin. On the other hand, comparing a retailer’s fourth-quarter profit margin with the profit margin from the same period a year before would be far more informative.

The profitability ratios are used to measure how well a business is performing in terms of profit. The profitability ratios are considered to be the basic bank financial ratios. In other words, the profitability ratios give the various scales to measure the success of the firm. The profitability ratios can also be defined as the financial measurement that evaluates the capacity of a business to produce yield against the expenses and costs of business over a particular time period. If a company is having a higher profitability ratio compared to its competitor, it can be inferred that the company is doing better than that particular competitor. The higher or same profitability ratio of a company compared to its previous period also indicates that the company is doing well. The return on assets, profit margin and return on equity are the examples of profitability ratios.

The profitability ratio should be compared with the relevant time period. The profitability ratio of the industries that experience operations on the seasonal basis should be compared properly. For example, in case of the retail industry, high revenue is earned during the Christmas season. Hence comparing the profit margin of the 4th quarter with the 1st quarter of a retailer will not give clear picture of the profitability of the retail business. Hence in order to judge the profitability of the retailer perfectly, the profit margin of the 4th quarter of a retailer should be compared with the profit margin of the 4th quarter of the previous year.

The measures of profitability ratios are:

22.2 GROSS PROFIT MARGIN
It gives the value of gross profit earned by the company over sale. The mathematical formula for gross profit margin is:
Gross Profit Margin = \( \frac{\text{Total sales} - \text{Cost of sold goods}}{\text{Sales}} \)

**22.2.1 Return on equity**

It gives the value of profit that is earned against every invested dollar in the stock of the firm. The mathematical formula for return on equity is:
Return on Equity = \( \frac{\text{Net Income}}{\text{Shareholder Equity}} \)

**22.2.2 Return on assets**

It tells how the assets of the firm are used most effectively to earn profit. The mathematical formula for return on assets is:
Return on Assets = \( \frac{\text{Net Income}}{\text{Total assets}} \)

**22.2.3 Profitability analysis ratios**

\[
\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Average Total Assets}}
\]

\[
\text{Average Total Assets} = \frac{\text{Beginning Total Assets} + \text{Ending Total Assets}}{2}
\]

\[
\text{Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Average Stockholders' Equity}}
\]

\[
\text{Average Stockholders' Equity} = \frac{\text{Beginning Stockholders' Equity} + \text{Ending Stockholders' Equity}}{2}
\]

\[
\text{Return on Common Equity} = \frac{\text{Net Income}}{\text{Average Common Stockholders' Equity}}
\]

\[
\text{Average Common Stockholders' Equity} = \frac{\text{Beginning Common Stockholders' Equity} + \text{Ending Common Stockholders' Equity}}{2}
\]

\[
\text{Profit Margin} = \frac{\text{Net Income}}{\text{Sales}}
\]

\[
\text{Earnings Per Share} = \frac{\text{Net Income}}{\text{Number of Common Shares Outstanding}}
\]
Module 4. Financial statement analysis

Lesson- 23

Importance and limitations of financial ratios

23.1 USEFULNESS OF FINANCIAL STATEMENTS

Although financial statements provide information useful to decision-makers, there is much relevant information that they omit. Factors of market demand, technological developments, union activity, price of raw materials, human capital, tariffs, government regulation, subsidies, competitor actions, wars, acts of nature, etc. can have a dramatic effect on a company's prospects.

Although financial statement analysis is a highly useful tool, it has two limitations. These two limitations involve the comparability of financial data between companies and the need to look beyond ratios. Comparison of one company with another can provide valuable clues about the financial health of an organization. Unfortunately, differences in accounting methods between companies sometime make it difficult to compare the companies' financial data. For example if one company values its inventories by the LIFO method and another firm by average cost method, then direct comparisons of financial data such as inventory valuation are and cost of goods sold between the two firms may be misleading. Sometimes enough data are presented in foot notes to the financial statements to restate data to a comparable basis. Otherwise, the analyst should keep in mind the lack of comparability of the data before drawing any definite conclusion. Nevertheless, even with this limitation in mind, comparisons of key ratios with other companies and with industry averages often suggest avenues for further investigation.

An inexperienced analyst may assume that ratios are sufficient in themselves as a basis for judgment about the future. Nothing could be further from the truth. Conclusions based on ratio analysis must be regarded as tentative. Ratios should not be viewed as an end, but rather they should be viewed as a starting point, as indicators of what to pursue in greater depth. They raise may questions, but they rarely answer any question by themselves. In addition to ratios, other sources of data should be analyzed in order to make judgments about the future of an organization. They analyst should look, for example, at industry trends, technological changes, changes in consumer tastes, changes in broad economic factors, and changes within the firm itself. A recent change in a key management position, for example, might provide a basis for optimism about the future, even though the past performance of the firm may have been mediocre.

23.2 LIMITATIONS OF FINANCIAL STATEMENT ANALYSIS

Many things can impact the calculation of ratios and make comparisons difficult. The limitations include

a) The use of estimates in allocating costs to each period. The ratios will be as accurate as the estimates.

b) The cost principle is used to prepare financial statements. Financial data is not adjusted for price changes or inflation/deflation.

c) Companies have a choice of accounting methods (for example, inventory LIFO vs FIFO and depreciation methods). These differences impact ratios and make it difficult to compare companies using different
d) Companies may have different fiscal year ends making comparison difficult if the industry is cyclical.

e) Diversified companies are difficult to classify for comparison purposes.

f) Financial statement analysis does not provide answers to all the users' questions. In fact, it usually generates more questions.
Lesson 24

Introduction, Nature of Investment Decisions, Type Of Capital Budgeting Decisions

24.1 INTRODUCTION

It is a general practice that the benefit-cost analysis of the projects is worked out considering the market prices at the time the project is proposed to be taken up. But, such procedure will not be sufficient for economic analysis of agricultural projects, because the project is not going to be operated in perfect marketing situations, wherein, prices reflect the relative scarcity value of various goods and services. But, in developing countries a market is protected through various Governmental measures and there will be scarcity of foreign exchange and hence, market price of goods and services often do not provide a reliable guide to the costs and returns of the projects. So, it is appropriate to consider the costs and values of the inputs and outputs of the projects at the international exchange rates, i.e., border rates excluding the effects of domestic tariff, subsidies, excise and other taxes in the economic analysis of the projects.

24.1.1 COST ASPECTS

Annual capital costs of the project at current prices must be ascertained and then they should be weighted by the price index in order to get the cost at constant prices. Afterwards the same is multiplied by the Construction Conversion Factor (CCF) to get the economic costs of the project.

The CCF also plays a crucial role in giving weightage to the different commodities and inputs of the projects, such as traded commodities, non-traded commodities and services and unskilled labourers. The traded commodities include capital-intensive works which require imported machinery and material. In this case the Construction Conversion Factor (CCF) is taken as one. The non-traded commodities (goods) and services include works, which require skilled labourers and locally manufactured material. In this case, a conversion factor of 0.8 is used to get the economic value of these goods and services. The conversion factor of unskilled labourer employed in the project work is around 0.75. This is based on the rationale of considering the extent of employment and unemployment and migration of labourers from agriculture to other sectors.

Investment in agriculture is of two types. The first type involves operating investment such as seed, feed, fertilizers, etc., and the second one is concerned with capital assets such as land, machines, projects, etc.

Analysis of investment is different for these categories of investment, owing to differences in timing of expenses and their associated returns. Investment on operating inputs occurs within one production cycle of a year or sometimes less, but investment on capital assets entails a longer time period.

In the profit maximization principle, time is not brought into consideration because both expenses and returns are assumed to fall in the same production cycle. But, capital investments made in agricultural projects are made in different time periods and the returns are also spread over time. In order to assess the returns from
investments, available alternatives must be weighted for different lengths of time in respect of costs and returns i.e., recognition of time value of money, profitability and economic viability of capital investment.
Lesson-25
Methods of Capital Budgeting, NPV Method, Time Value Of Money

25.1 Time Value of Money

25.1.1 Future value of present money

A rupee today is worth more than a rupee in future. This is primarily due to its opportunity cost, i.e., interest. Interest will be added to the principle over time and hence its value increases. Future value of present sum is an important concept in financial analysis and this is called compounding. In the compounding process, the interest is added to the principal at the end of each time period which, in turn, earns interest. The future value of present investment in the project is calculated by using the well-known formula of compound interest:

\[ A = P (1+i)^t \]  \hspace{1cm} (25.1.)

Where,
- \( A \) = Future value of the present sum invested in the project,
- \( P \) = Principal amount invested in the project,
- \( i \) = Interest rate in per cent, and
- \( t \) = Number of years.

Let us assume that investment made in an agricultural project is Rs. 10 crore and that the expected rate of return from the project is 80 per cent. We are interested to know what would be the value of investment made after 40 years. This could be readily found using the equation.

Annuity

By definition annuity means a stream of payments or returns over time. The future value of annuity can be estimated using the following equation.

\[ A = P \]  \hspace{1cm} (25.2)

Where,
- \( A \) = Future value,
- \( P \) = Annual investment,
- \( t \) = Time period, and
- \( i \) = Rate of interest.

25.1.2 Present value of future money

The present value of future sum is the current value of investment to be received in the future. This present value is worked out through discounting process in which the future sum is discounted back to
the present time to find out its current or present value. The rationale behind this process is that a sum to be received in future is somewhat less now, because of time difference assuming a positive interest rate. Discounting is the inverse procedure of compounding. A present sum is compounded to know the future value and future sum is discounted to know the present value of future amount.

\[ PW = \ldots (5.3) \]

Where,

\( PW \) = Present worth of future money,
\( P \) = Money value in future,
\( i \) = Rate of interest,
\( t \) = Project life period in years.

The present value of annuity or stream of constant annual payment is found out using the following formula

\[ PW = \ldots (5.4) \]

Where,

\( PW \) = Present worth of future money,
\( P \) = Money value in future,
\( i \) = Rate of interest, and
\( t \) = Project life period in years.

Investment analysis is also called capital budgeting. The profitability of two or more alternative investment projects are determined through capital-budgeting technique. Four components are required for the analysis of investment. They are: (1) net cash revenues from different projects, (2) their costs, (3) terminal or salvage value of investment, and (4) interest or discount rate to be used.

Cash receipts less cash expenses give net cash revenue resulting from the alternative proposed projects.

The cost of investment is the actual total expenditure for its implementation. The terminal value of the project will also be estimated and it is set equal to the junk value for depreciable assets of the project. For simplicity junk value is assumed to be zero. The land values of the projects should be estimated at the market rate, at the time at which the project is terminated.

Another problem in economic analysis is with the estimation of discount rate. This discount rate is the opportunity cost of capital, which represents the minimum rate of return for justifying the investment. If the proposed investment in the project fails to earn this minimum rate of interest, then the capital should not be invested in the said project and alternative projects must be chosen as worthy of investment.
If capital is to be borrowed for investment on the project, then the discount rate chosen for the economic analysis should be higher than the cost of borrowed capital. Under risk situations, the discount rate is to be equaled to the expected rate of return from alternative projects of equal risk. Many problems are involved in deciding upon the actual rate of discount in project evaluation particularly, when the discount rate is to be adjusted to the risk. The methodology on the exact rate of discount to be used in the economic analysis is already discussed.

Broadly there are two methods of project appraisal, viz., undiscounted measures and discounted measures. In the undiscounted measures, payback period, ranking by inspection, proceeds per rupee of outlay, average annual proceeds of rupee outlay, etc., are important. Under discounted measures Net Present Worth (NPW), Benefit-Cost Ratio (B-C ratio), Internal Rate of Return (IRR), and Profitability Index are prominent.

25.2 UNDISCOUNTED MEASURES

The undiscounted measures are the naïve methods of choosing among the alternative projects. The methods listed under these measures often mislead in ranking of the projects and hence, choices go wrong.

25.2.1 Ranking by inspection

It is based on the size of costs and length of cash-flow stream. Suppose if the two projects are with the same investment and the same net value of production, but with difference in the length of the period, then the project with longer duration is preferred to the one with shorter time period. This leads to bias in the choice obviously due to the absence of more elaborate and appropriate analysis.
26.1. INTRODUCTION

Cash flows are yearly net benefits accrued from the project. If they are weighted by discount rate, they become discounted cash flows. These discounted cash flows are the best estimates to decide on the worth of the project. This approach will give the Net Present Worth of the project. The present worth of the costs is subtracted from the present worth of the benefits in order to arrive at the Net Present Worth of the project every year.

From the annual stream of gross benefits of the project, the capital invested and the other input costs like labour, machinery, fertilizers, pesticides, management, etc., are deducted. From the residual, the return of capital and return on capital or return to capital, i.e., recovering investment made in the project (depreciation) and compensation for the use of money (interest) are computed. This residual is called cash flow of the project. In financial analysis the cash flow is the net incremental benefit of the project. But, in accounting, the term implies the sum of cash flows of projects plus depreciation allowance. The concept of cash flow in the financial analysis includes, both return of capital and return to capital. We generally do not resort to deduction of depreciation, i.e., allowance of return of capital or interest in the economic analysis, because our analytical technique automatically takes care of return of capital in determining the worth of the project. In economic analysis, income taxes, sales taxes, custom duties are only transfer payments, but not payments used in the production process. Hence, from the gross returns these are not deducted. But, in financial analysis, taxes are a cost, which the individual must pay before arriving at the recovered capital, and compensating it for the use of capital.

By far, financial analysis aims at estimation of returns to all resources employed in the project. Hence, borrowed capital is considered as a benefit received, while, its interest is considered as a cost and it is deducted from the gross returns. In economic analysis, this consideration is ruled out because of the assumption, that all the resources employed in the project belong to someone or the other, within the society. In the economic analysis, it is important that the prices of some of the inputs must be shadow prices. In financial analysis all prices are market prices and they must include taxes and subsidies. For vivid distinction between cash flows in the economic analysis vis-à-vis financial analysis (Gittinger, 1976) may be referred.

This is simply the present worth of the cash flow stream. Sometimes, it is referred to as Net Present Value (NPV). The choice of discount rate to be used in the measurement of Net Present Value (NPV) poses many problems as discussed earlier. It is helpful in working out benefit-cost ratio of the project. The selection criterion of the projects depends upon the positive value of the net present worth, when discounted at the opportunity cost of the capital. This could be satisfactorily done, provided there is a correct estimate of opportunity cost of capital. NPV is an absolute measure, but not relative.

NPV of the project is estimated using the following equation:

\[ NPV = \ldots (26.1) \]
Where,

\[ P_1 = \text{Net cash flow in first year}, \]

\[ i = \text{Discount rate}, \]

\[ t = \text{Time period}, \]

\[ C = \text{Initial cost of the investment}. \]

Projects with positive NPV are given weightage in the selection compared to those with negative present values, while zero NPV makes the investor indifferent.

### 28.2 PROFITABILITY INDEX

Here we relate the NPV of the cash flows of the project to the total capital required \((cr)\) for a project through “profitability index”. It is defined as the ratio of net present values of the cash flows to the initial capital expenditure \((co)\). Assuming that all the capital expenditure is incurred in year zero, the profitability index (PI) is as follows:

\[
\text{PI} = \frac{\text{Net Present Worth}}{\text{Initial Capital Expenditure}}
\]

#### Table 26.1: Estimation of Profitability Index

*Original amount invested in a Project = Rs. 60,000*

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash flow (in Rs.)</th>
<th>Discounting Factor (15%)</th>
<th>Net Present Worth (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14,500</td>
<td>0.8929</td>
<td>12,947</td>
</tr>
<tr>
<td>2</td>
<td>14,900</td>
<td>0.7972</td>
<td>11,878</td>
</tr>
<tr>
<td>3</td>
<td>16,600</td>
<td>0.7118</td>
<td>11,816</td>
</tr>
<tr>
<td>4</td>
<td>18,700</td>
<td>0.6355</td>
<td>11,884</td>
</tr>
<tr>
<td>5</td>
<td>19,000</td>
<td>0.5674</td>
<td>10,781</td>
</tr>
<tr>
<td>6</td>
<td>20,000</td>
<td>0.5066</td>
<td>10,132</td>
</tr>
<tr>
<td></td>
<td>1,03,700</td>
<td></td>
<td>69,438</td>
</tr>
</tbody>
</table>

\[
\text{PI} = \frac{1,03,700}{60,000} = 1.1573
\]
Lesson- 27

IRR Method of Capital Budgeting

27.1. INTERNAL RATE OF RETURN (IRR)

In the computation of Internal Rate of Return (IRR), the time value of money is accounted. The method of working IRR provides the knowledge of actual rate of return from the different projects. Thus IRR is known as ‘marginal efficiency of capital or yield on the investment’. It is the discount rate at which the present values of the net cash flows are just equal to zero, i.e., NPW = zero. When NPW is set equal to zero, the equation is solved for ‘I’. This is the internal rate of return. The IRR must be found out by trial and error with some approximation.

In the working procedure, an arbitrary discount rate is assumed and its corresponding NPW is arrived at. The positive NPW value of the project indicates that IRR is still higher and the next assumed arbitrary IRR value must be comparatively higher than the initial level. This process is continued until NPW becomes negative. Then by interpolation method the exact IRR is found out using the following formula:

\[ \text{IRR} = \frac{\text{NPW}_{\text{prev}} - \text{NPW}_{\text{next}}}{\text{NPW}_{\text{prev}}} \times \frac{I_{\text{prev}} - I_{\text{next}}}{I_{\text{next}} - I_{\text{prev}}} \]

Table - 27.1: Estimation of IRR for Dairy farm (Hypothetical)

<table>
<thead>
<tr>
<th>Year</th>
<th>Costs (in Rs.)</th>
<th>Gross income (in Rs.)</th>
<th>Net income (in Rs.)</th>
<th>Discount factor (40%)</th>
<th>Net present worth (in Rs.)</th>
<th>Discount factor (43%)</th>
<th>Net present worth (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38,900</td>
<td>-</td>
<td>-38,900</td>
<td>0.7143</td>
<td>-27,786.27</td>
<td>0.6993</td>
<td>-27,202.77</td>
</tr>
<tr>
<td>2</td>
<td>9,239</td>
<td>28,475</td>
<td>19,236</td>
<td>0.5102</td>
<td>9,814.21</td>
<td>0.48902</td>
<td>9,406.4</td>
</tr>
<tr>
<td>3</td>
<td>10,573</td>
<td>32,550</td>
<td>21,975</td>
<td>0.3644</td>
<td>8,007.69</td>
<td>0.3419</td>
<td>7,513.25</td>
</tr>
<tr>
<td>4</td>
<td>11,952</td>
<td>35,610</td>
<td>23,658</td>
<td>0.2603</td>
<td>6,158.17</td>
<td>0.2391</td>
<td>5,656.62</td>
</tr>
<tr>
<td>5</td>
<td>12,858</td>
<td>39,802</td>
<td>26,944</td>
<td>0.1859</td>
<td>5,008.89</td>
<td>0.1672</td>
<td>4,505.04</td>
</tr>
</tbody>
</table>

\[ \text{IRR} = 40 + 3 \times 0.9083 \]

\[ = 40 + 3 (0.9083) \]

\[ = 40 + 2.7249 \]

\[ = 42.7249 \]

Table 27.2 Estimation of IRR for Dairy farm (Hypothetical)
<table>
<thead>
<tr>
<th>Year</th>
<th>Costs (in Rs.)</th>
<th>Gross income (in Rs.)</th>
<th>Net income (in Rs.)</th>
<th>Discount factor (40%)</th>
<th>Net present worth (in Rs.)</th>
<th>Discount factor (30%)</th>
<th>Net Present worth (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of 6\textsuperscript{th} year</td>
<td>25,000</td>
<td>-</td>
<td>-25,000</td>
<td>0.262</td>
<td>-6550</td>
<td>0.207</td>
<td>-5,175</td>
</tr>
<tr>
<td>End of 7\textsuperscript{th} year</td>
<td>4,250</td>
<td>10,260</td>
<td>6,010</td>
<td>0.21</td>
<td>1,262.01</td>
<td>0.159</td>
<td>955.59</td>
</tr>
<tr>
<td>End of 8\textsuperscript{th} year</td>
<td>4,792</td>
<td>12,550</td>
<td>7,758</td>
<td>0.168</td>
<td>1,303.30</td>
<td>0.123</td>
<td>954.23</td>
</tr>
<tr>
<td>End of 9\textsuperscript{th} year</td>
<td>5,368</td>
<td>14,530</td>
<td>9,162</td>
<td>0.134</td>
<td>1,227.71</td>
<td>0.094</td>
<td>861.23</td>
</tr>
<tr>
<td>End of 10\textsuperscript{th} year</td>
<td>5,975</td>
<td>16,275</td>
<td>10,300</td>
<td>0.107</td>
<td>1,102.10</td>
<td>0.073</td>
<td>751.90</td>
</tr>
<tr>
<td>End of 11\textsuperscript{th} year</td>
<td>6,456</td>
<td>19,396</td>
<td>12,940</td>
<td>0.086</td>
<td>1,112.84</td>
<td>0.056</td>
<td>724.64</td>
</tr>
<tr>
<td>End of 12\textsuperscript{th} year</td>
<td>7,187</td>
<td>21,470</td>
<td>14,283</td>
<td>0.069</td>
<td>985.53</td>
<td>0.043</td>
<td>614.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35,453</td>
<td>443.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-313.24</td>
</tr>
</tbody>
</table>

\textbf{IRR} = 25 + 5 \begin{align} & 25 \times 5 (0.586) \\ &= 25 + 2.93 \\ &= 27.93 \end{align}
LESSON 28
PAY BACK PERIOD, ACCOUNTING RATE OF RETURN METHOD

28.1 Payback Period

Simple method of ranking a project is the length of time required to get back the investment on the project. The payback period of the project is estimated by using the straightforward formula:
\[ P = \frac{I}{E} \]  
(5.5)

Where,
- \( P \) = Payback period of the project in years,
- \( I \) = Investment of the project in rupees, and
- \( E \) = Annual net cash revenue in rupees.

The preference of a particular project is based on the lesser payback period. This is shown in Table 8.1

Table 28.1 Calculation of Payback Period

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flow (in Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project ‘A’</td>
</tr>
<tr>
<td>0</td>
<td>-20,000</td>
</tr>
<tr>
<td>1</td>
<td>5,000</td>
</tr>
<tr>
<td>2</td>
<td>5,000</td>
</tr>
<tr>
<td>3</td>
<td>5,000</td>
</tr>
<tr>
<td>4</td>
<td>5,000</td>
</tr>
<tr>
<td>5</td>
<td>5,000</td>
</tr>
<tr>
<td>6</td>
<td>5,000</td>
</tr>
</tbody>
</table>

Project 'A' = Rs20000/ Rs5000 = 4 years
Project 'B' = Rs20000/ Rs4000 = 5 years

It is inadequate to exercise the option among the alternatives, because it fails to consider very important points like, consistency of running, timing of the proceeds, returns after the payback period and whether the cash-flows would be positive or negative in future.

28.1.1 Proceeds per rupee of outlay
This is worked out by dividing the total proceeds with the total amount of investment, and a given project is ranked based on the highest magnitude of the parameter.

28.1.2 Average annual proceeds of rupee outlay

This is another simple choice criterion and in this procedure, total receipts are first divided by the project life span and the average proceeds obtained per year are divided by the initial investment on the project. Here too, ranking is given to the projects, based on the highest magnitude of the estimate.

The major drawback with undiscounted measures is that for the same data of the project, we get different rankings; hence, choice process becomes useless. Rankings by these methods are inconsistent and incompatible.

28.1.3 Discounted measures

Cash flows are yearly net benefits accrued from the project. If they are weighted by discount rate, they become discounted cash flows. These discounted cash flows are the best estimates to decide on the worth of the project. This approach will give the Net Present Worth of the project. The present worth of the costs is subtracted from the present worth of the benefits in order to arrive at the Net Present Worth of the project every year.

28.1.3.1 Measurement of the cash flows of the project

From the annual stream of gross benefits of the project, the capital invested and the other input costs like labour, machinery, fertilizers, pesticides, management, etc., are deducted. From the residual, the return of capital and return on capital or return to capital, i.e., recovering investment made in the project (depreciation) and compensation for the use of money (interest) are computed. This residual is called cash flow of the project. In financial analysis, the cash flow is the net incremental benefit of the project. But, in accounting, the term implies the sum of cash flows of projects plus depreciation allowance. The concept of cash flow in the financial analysis includes, both return of capital and return to capital. We generally do not resort to deduction of depreciation, i.e., allowance of return of capital or interest in the economic analysis, because our analytical technique automatically takes care of return of capital in determining the worth of the project. In economic analysis, income taxes, sales taxes, custom duties are only transfer payments, but not payments used in the production process. Hence, from the gross returns these are not deducted. But, in financial analysis, taxes are a cost, which the individual must pay before arriving at the recovered capital, and compensating it for the use of capital.

By far, financial analysis aims at estimation of returns to all resources employed in the project. Hence, borrowed capital is considered as a benefit received, while, its interest is considered as a cost and it is deducted from the gross returns. In economic analysis, this consideration is ruled out because of the assumption, that all the resources employed in the project belong to someone or the other, within the society. In the economic analysis, it is important that the prices of some of the inputs must be shadow prices. In financial analysis all prices are market prices and they must include taxes and subsidies. For vivid distinction between cash flows in the economic analysis vis-à-vis financial analysis (Gittinger, 1976) may be referred.

ACCOUNTING RATE OF RETURN
The accounting rate of return, also called the average rate of return, is defined as

\[
\frac{\text{Profit after Tax}}{\text{Book Value of the investment}}
\]

The numerator of this ratio may be measured as the average annual post – tax profit over the life of the investment and the denominator is the average book value of fixed assets committed to the project. To illustrate the calculation, consider a project:

<table>
<thead>
<tr>
<th>Year</th>
<th>Book value of fixed investment</th>
<th>Profit after tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>90,000</td>
<td>Rs. 20,000</td>
</tr>
<tr>
<td>2</td>
<td>80,000</td>
<td>22,000</td>
</tr>
<tr>
<td>3</td>
<td>70,000</td>
<td>24,000</td>
</tr>
<tr>
<td>4</td>
<td>60,000</td>
<td>26,000</td>
</tr>
<tr>
<td>5</td>
<td>50,000</td>
<td>28,000</td>
</tr>
</tbody>
</table>

The accounting rate of return is:

\[
= \frac{1}{5} \left( \frac{20,000 + 22,000 + 24,000 + 26,000 + 28,000}{90,000 + 80,000 + 70,000 + 60,000 + 50,000} \right)
\]

= 34 Percent

Obviously, the higher the accounting rate of return, the better the project. In general, projects which have an accounting rate of return equal to or greater than a pre-specified cut – off rate of return – which is usually between 20 percent and 30 percent – are accepted ; other are rejected.

**Evaluation**

Traditionally a popular investment appraisal criterion, the accounting rate of return has the following virtues.

- It is simple to calculate.
- It is based on accounting information which is readily available and familiar to businessman.
- While it considers benefits over the entire life of the project, it can be used even with limited data. As one executive put it: " The discounted cash flow methods calls for estimates of costs and revenues over the whole project life. this is difficult. Very often we can't estimate the life. We have been using machines longer than their life by good maintenance. Changes in costs and revenues cannot be predicted. Due to these difficulties we use the accounting rate of return. Here we take our best estimates for 2 – 3 years and calculate the average return. Once the project is established, the balance between cost and revenue can be maintained in normal circumstances."

Its shortcomings, however, seem to be considerable:

- It is based upon accounting profit, not cash flow.
- It does not take into account the time value of money. To illustrate this point, consider two investment proposals. A and B, each requiring an outlay of Rs. 100,000. Both the proposals have an expected life of 4 years after which their salvage value would be nil.

<table>
<thead>
<tr>
<th>Year</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Book Value</td>
<td>Depreciation</td>
</tr>
<tr>
<td>0</td>
<td>100,000</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>75,000</td>
<td>25,000</td>
</tr>
</tbody>
</table>

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Both the proposals, with an accounting rate of return equal to 40 percent, look alike from the accounting rate of return point of view, through project A, because it provides benefits earlier, is much more desirable. While the payback period criterion gives no weightage to more distant benefits, the accounting rate of return criterion seems to give them too much weightage.

- The accounting rate of return measure is internally inconsistent. While the numerator of this measure represents profit belonging to equity and preference stockholders its denominator represents fixed investment which is rarely, if ever, equal to the contribution of equity and preference stockholders.
- The accounting rate of return does not provide any guidance on what the target rate of return should be.
LESSON 29
COST OF CAPITAL

29.1 Introduction

Cost of Capital

A company's cost of capital is the weighted average cost of various sources of finance used by it, viz., equity, preference, and debt.

Suppose that a company uses equity, preference, and debt in the following proportions, 50, 10, and 40. If the component costs of equity, preference, and debt are 16 percent, 12 percent, and 8 percent respectively, the weighted average cost of capital (WACC) will be:

\[
WACC = (\text{Proportion of equity}) \times (\text{Cost of equity}) + (\text{Proportion of preference}) \times (\text{Cost of preference}) + (\text{Proportion of debt}) \times (\text{Cost of Debt})
\]

\[
= (0.5) \times (16) + (0.10) \times (12) + (0.4) \times (8) = 12.4 \text{ Percent}
\]

Bear in mind the following in applying the above formula:

- For the sake of simplicity, we have considered only three types of capital (equity nonconvertible, noncallable preference, and nonconvertible, noncallable debt). We have ignored other forms of capital like convertible or callable preference, convertible or callable debt, bonds with payments linked to stock market index, bonds that are puttable or extendable, warrants, so on and so forth. Calculating the cost of these forms of capital is somewhat complicated. Fortunately, more often than not, they are a minor source of capital. Hence, excluding them may not make a material difference.

- Debt includes long-term debt as well as short-term debt (such as working capital loans and commercial paper). Some companies leave out the cost of short-term debt while calculating the weighted average cost of capital. In principle, this is not correct. Investors who provide short-term debt also have a claim on the earnings of the firm. If a company ignores this claim, it will misstate the rate of return required on its investments.

- Non-interest bearing liabilities, such as trade creditors, are not included in the calculation of the weighted average cost of capital. This is done to ensure consistency and simplify valuation. True, non-interest bearing liabilities have a cost. However, this cost is implicitly reflected in the price paid by the firm to acquire goods and services. Hence, it is already taken care of before the free cash flow is determined. While it is possible to separate the implicit financing costs of non-interest bearing liabilities from the cash flow, it will make the analysis needlessly more complex, without contributing to the quality thereof.

Rationale The rational for using the WACC as the hurdle rate in capital budgeting is fairly straightforward. If a firm's rate of return on its investment exceeds its cost of capital, equity shareholders benefit. To illustrate this point, consider a firm which employs equity and debt in equal proportions and whose cost of equity and debt are 14 percent and 6 percent respectively. The cost of capital, which is the weighted average cost of capital, works out to 10 percent \((0.5 \times 14 + 0.5 \times 6)\). If the firm invests Rs. 100 million, say, on a project which earns a rate of return of 12 percent, the return on equity funds employed in the project will be:

\[
\text{Total return on the project \ – \ Interest on debt} = 100(0.12) – 50(0.06) = 18 \text{ percent}
\]
Equity funds 50

Add cost of capital
30.1 MEANING OF WORKING CAPITAL

The term working capital refers to the capital required for day-to-day operations of a business enterprise. It is represented by excess of current assets over current liabilities. There are two concepts of working capital: Gross and Net.

The term “gross working capital”, also referred to as working capital, means the total current assets. The term "net working capital" can be defined in two ways: (i) the most common definition of net working capital (NWC) is the difference between current assets and current liabilities; (ii) and alternate definition of NWC is that portion of a firm's current assets which is financed with long-term funds.

The task of the financial manager in managing working capital efficiently is to ensure sufficient liquidity in the operations of the enterprise. The liquidity of a business firm is measured by its ability to satisfy short-term obligations as they become due. The three basic measures of a firm's over-all liquidity are: (i) the current ratio, (ii) the acid-test ratio, and (iii) net working capital. The NWC helps in comparing the liquidity of the same firm over time. For purposes of working capital management, therefore, NWC can be said to measure the liquidity of the firm. In other words, the goal of working capital management is to manage the current assets and liabilities in such a way that an acceptable level of NWC is maintained.

30.1.1 Constituents of working capital

The two concepts of working capital-gross and net-are not exclusive rather they have equal significance from management View point. The gross working capital concept focuses attention on two aspects of current assets management: (a) optimum investment in current assets and (b) financing of current assets. The consideration of the level of investment in current assets should avoid two danger points -excessive and inadequate investments in current assets. The investment in current assets should be just adequate not more, not less to the needs of the business firm. Excessive investment in current assets should be avoided because it impairs firm's profitability as idle investment earns nothing. On the other hand, inadequate amount of working capital can threaten the solvency of the firm, if it falls to meet its current obligations. It should be realized that the working capital needs of the firm may be fluctuating with changing business activity. This may cause excess or shortage of working capital frequently. The management should be too prompt to initiate action and correct the imbalances.

The gross working capital needs for arranging funds to finance current assets. Whenever a need for working capital funds arises due to the increasing level of business activity or for any other reason, the arrangement should be made quickly. Similarly, if suddenly some surplus funds arise, they should not be allowed to remain idle, but should be invested in short- term securities. Thus, the financial manager should have knowledge of the sources of Working capital funds as well as the investment avenues where the idle funds may be temporarily invested.
The net working capital being the difference between current assets and current liabilities is a qualitative concept. It indicates (a) the liquidity position of the firm and (b) suggests the extent to which working capital needs may be financed by permanent sources of funds. Current assets should be sufficiently excess of current liabilities to constitute a margin or buffer for maturing obligations within the ordinary operating cycle of a business. In order to protect their interests, short-term creditors always like a company to maintain current assets at a higher level than current liabilities. It is a conventional rule to maintain the level of current assets twice of the level of current liabilities. However, the quality of current assets should be considered in determining the level of current assets vis-a-vis current liabilities. A weak liquidity position poses a threat to the solvency of the company and makes it unsafe and unsound. A negative working capital 'means a negative liquidity and may prove to be harmful for the company. Excessive liquidity is also bad. It may be due to mismanagement of current assets. Therefore, prompt and timely action should be taken by management to improve and correct the imbalance in the liquidity position of the firm.

The net working capital concept also covers the question of judicious mix of long-term and short-term funds for financing current assets. For every firm, there is a minimum amount of net working capital which is permanent. Therefore a portion of the working capital should be financed with the permanent sources of funds such as owner's capital, debentures, long-term debt, preference capital or retained earnings. Management must, therefore decide the extent to which current assets should be financed with equity capital and/or borrowed capital.

In summary, it may be emphasized that 'gross and net concepts of working capital are two important facets of the working capital management. There is no precise way to determine the exact amount gross or net, working capital for every firm. The data and problems of each company should be analyzed to determine the amount of working Capital. It is not feasible in practice to finance current assets by short-term sources only. Keeping in view the constraints other individual company, a judicious mix of long-term finances should be invested in current assets.
Lesson 31
Factors Affecting Working Capital

31.1 Factors Affecting Working Capital

The working capital requirements of an enterprise are basically related to the conduct of the business. Enterprises fall into some broad categories depending on the nature of their business. For instance, public utilities have certain features which have a bearing on their working capital needs. The two relevant features are: (i) the cash nature of business, i.e., cash sale and (ii) sale of services rather than commodities. In view of these features, they do not maintain big inventories and have, therefore, probably the least requirement of working capital. At the other extreme are trading and financial enterprises.

The nature of the business is such that they have to maintain a sufficient amount of cash. They have necessarily to invest proportionately large amounts in working capital. The manufacturing enterprises fall in a sense between these two extremes. The industrial concerns require fairly large amounts of working capital though it varies from industry to industry depending on their asset structure. The proportion of current assets to total assets measures the relative requirements of working capital of various industries.

31.2 Operating Cycle

OPERATING CYCLE AND CASH CYCLE

The investment in working is influenced by the following events in the operating cycle of the firm:

- Purchase of raw materials
- Payment for raw materials
- Manufacture of goods
- Sale of finished goods
- Collection of cash for sales

Exhibit 26.6 depicts these events on the cash flow line. The firm begins with the purchase of raw materials which are paid for after a delay which represents the accounts payable period. The firm converts the raw materials into finished goods is the inventory period. Customers pay their bills some time after the sales. The period that elapses between the date of sales and the date of collection of receivables is the accounts payable period (debt period).

The time that elapses between the purchase of raw materials and the collection of cash for sales is referred to as the operating cycle, whereas the time length between the payment for raw material purchases and the collection of cash for sales is referred to as the Cash Cycle. The operating cycle is the sum of the inventory period and the accounts receivable period, whereas the cash cycle is equal to the operating cycle less the accounts payable period.
From the financial statements of the firm, we can estimate the inventory period, the accounts receivable period, and the accounts payable period.

**Exhibit 26.6 OPERATING AND CASH CYCLE**

Order Placed  Stock arrives  Finished goods sold  Cash received

<table>
<thead>
<tr>
<th>Inventory Period</th>
<th>Accounts receivable period</th>
<th>Accounts payable period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inventory Period =

Accounts receivable period =

Accounts payable period =

Exhibit 26.7 provides the relevant information for Horizon Limited. Based on this information, we calculate several things:

Inventory Period = 50.1 days

Accounts receivable period = 40.2 days

Accounts payable period = 29.4 days

Operating Cycle = 50.1 + 40.2 = 90.3 days

Cash Cycle = 90.3 - 29.4 = 60.9 days

**31.2.1.1 Production policies**

The production policies pursued by the management have a significant effect on the requirements of working capital of the business. The production schedule has a great influence on the level of inventories. The decision of the management regarding automation etc. will also have its effect on working capital requirements. In case of labour-intensive industries, the working capital requirements will be more, which in case of highly automatic plants, the requirements of long-term funds will be more.

**31.2.1.2 Business fluctuation**

Most firms experience seasonal and cyclical fluctuations in the demand for their products and services. These business variations affect the working capital requirement, specially the temporary
working capital requirements of the firm. When there is an upward swing in the economy, sales will increase; correspondingly, the firm’s investment in inventories and book debts will also increase. Under boom, additional investment in fixed assets may be made by some firms to increase their productive capacity. This act of the firms will require further additions of working capital. To meet their requirements of funds for fixed assets and current assets under boom period, firms generally resort to substantial borrowing. On the other hand, when there is a decline in the economy sales will fall and consequently, levels of inventories and book debts will also fall. Under recessionary conditions, firms try to reduce their short-term borrowings.

Seasonal fluctuations not only affect working capital requirements but also create production problems for the firm. During periods of peak demand increasing production may be expensive for the firm. Similarly it will be more expensive during slack periods when the firm has to sustain its working force and physical facilities without adequate production- and sales. A firm may thus follow a policy of steady production,' Irrespective of seasonal changes in order to utilize its resources to the fullest extent. Such a policy will mean accumulation of inventories during the off season and their quick disposal during the peak season.

The increasing level of inventories during the slack season will require increasing funds to be tied up in the working capital for some months. Unlike cyclical fluctuations, seasonal fluctuations generally conform to a steady pattern. Therefore, financial arrangements for seasonal working capital requirements can be made in advance. However, the financial plan or arrangement should be flexible enough to take care of some abrupt seasonal fluctuations.

31.2.1.3 Credit policy

A company, which allows liberal credits to its customers, may have higher sales but will need more working capital as compared to a company which has efficient debt collection machinery and observing strict credit terms. This is because in the case of the former company a substantial amount of its funds will get tied up in its sundry debtors. The working capital requirements can also be affected by the Credit facilities enjoyed by the company. A company enjoying liberal credit facilities from its suppliers will need lower amount of working capital as compared to a company which does not enjoy such credit facilities.

31.2.1.4 Growth and expansion

As a company grows, it is logical to expect that a large amount of working capital will be required. It is of course difficult to determine precisely the relationship between the growth in the volume of business of a company and the increase in its working capital. The composition of working capital in a growing company also shifts with economic circumstances and corporate practices. Other things being equal growth industries require more working capita) than those that are static. The critical fact; however is that the need for increased working capital funds does not follow the growth in business activities but
Advance planning of working capital is therefore, a continuing necessity for a growing concern. Or else the company may have substantial earnings but little cash.

### 31.2.1.5 Fluctuations of supply

Certain companies have to obtain and maintain large reserves of raw materials due to their irregular sales and intermittent supply. This is particularly true in case of companies requiring special kind of raw materials available only from one or two sources. In such a case large quantity of raw materials has to be kept in store to avoid any possibility of the production process coming to a dead halt. Thus, the working capital requirements in case of such industries would be large.
Lesson 32

Working Capital Management, Inventory Management

32.1 WORKING CAPITAL MANAGEMENT

Firms differ in their capacity to generate profit from business operations. Some firms enjoy a dominant position due to quality product or good marketing management or monopoly power in the market and earn a high profit margin. Some other firms may have to operate in an environment of intense competition and may earn low margin of profits. A high net profit margin contributes towards the working capital pool. In fact the net profit is a source of working capital to the extent it has been earned in cash. The profit can be found by adjusting non-cash items, such as depreciation, outstanding expenses, accumulated expenses and losses Witten-off, in the net profit. But, in practice, the net cash inflows from operations cannot be considered as cash available for use at the end of the period. Even as the company's operations are in progress, cash is used up for augmenting stocks book debts or fixed assets. The financial manager must see whether or not the cash generated has been used for rightful purposes. Even if the net profits are earned in cash at the end of the period whole of it is not available for working capital purposes. The contribution towards working capital would be affected by the way in which profits are appropriated. The availability of cash generated from operations, thus depends upon taxation, dividend and retention policy and depreciation policy.

Taxes must be paid out of profits. Tax liability is unavoidable and adequate provision should be made for, it in working capital planning. If the tax liability increases, it will impose an additional strain on working capital. The financial manager must do tax planning in order to avail the benefits of all sorts of, tax concessions and incentives.

The firm's policy to retain or distribute profits' also has a bearing on working capital. Payment of dividend consumes cash resources and thus reduces firm's working capital to that extent. If the profits are retained in the business the firm's working capital position will be strengthened. A number of factors should be evaluated by the financial manager in deciding whether profits will be retained or distributed. A firm may follow the policy of paying a constant amount of dividend every year. In the years the firm makes high profits, its liquidity position will become strong; but in the year it does not earn sufficient profits, the preserved cash resources will be utilized to pay dividends, Sometimes a company wants to pay dividend but at the same time it does not want to drain away its cash resources. The alternative in such a case is to declare bonus shares (stock dividend), out of the past accumulated profits.

The depreciation policy, through its effect on tax liability and retained earnings, has an Influence on working capital. Depreciation is tax deductible. Higher the amount of depreciation lowers the tax liability and more the cash profit. Similarly the amount of net profits will be less if higher depreciation, is charged. If the dividend policy is linked with net profits, the firm can pay less dividend by providing
more depreciation. Thus depreciation is an indirect way of retaining profits and preserving the firm's working capital position.

32.2 ESTIMATION OF WORKING CAPITAL

32.3.2 Work-in-progress

The cost of work-in-progress includes raw materials, wages and overheads. In determining the amount of work-in-progress, the time period for which the goods will be in the course of production process is most important. Consider the following example:

Production: 12,000 Units per annum
Elements of cost:
Direct material 50%
Direct labour 40%
Overhead 10%

Each unit costs Rs. 8 and will be in process for one month on an average.

The amount of working capital locked up in work-in-progress will be computed as follows:
Production for one month: 1,000 Units
Cost of Direct Materials: 1,000xRs.4 = 4,000
Direct Labour: 1,000xRs.3.20 = 3,200
Overhead: 1,000xRs.0.80 = 800
Total: = 8,000

In case the wages and overheads accrue evenly during the time production is in progress, then the labour and overhead cost will be taken only for half a month instead of for one month, taken above.

32.3.3 Finished goods

The period for which the finished goods have to remain in the warehouse before sales is an important factor for determining the amount locked up in finished goods. Consider the following example:
Units manufactured during the year: 12,000
Cost per unit: Rs. 8
Elements of cost
Direct materials 50%
Direct labour 40%
Overhead 10%

Finished goods are to stay in the warehouse for two months on an average before being sent to the customers.

The working capital requirements for finished goods will be computed as follows:
Rs.
Production for one month : 1,000 Units
Cost of Direct Materials : 2,000x Rs.4 = 8,000
Direct Labour : 2,000x Rs.3.20 = 6,400
Overhead : 2,000x Rs.0.80 = 1,600
Total =16,000

32.4 SUNDARY DEBTORS

The amount of funds locked up in Sundry Debtors will be computed on the basis of credit sales and the time-lag in collecting payment.
Consider the following example:
Credit sales for the year : Rs. 1,20,000
Average credit period enjoyed by the debtors: 2 months
The amount of working capital locked up in Sundry debtors will be computed as follows:
Monthly credit sales : Rs. 10,000
Amount of sundry Debtors : Rs. 10,000 x 2 months = Rs. 20,000

32.5 CASH AND BANK BALANCE

The amount of money to be kept as cash in hand or cash at bank can be estimated on the basis of past experience. Every businessman knows the amount that he will require for meeting his day-to-day payments.

32.6 SUNDARY CREDITORS

The lag in payment to suppliers of raw materials, goods, etc., and the likely credit purchases to be made during the period will help in estimating the amount of creditors. This will be clear with the help of the following example:

Credit purchase per annum : Rs. 24,000
Credit period enjoyed : 1 month
This means on an average Rs.2, 000 will remain outstanding on account of creditors.

32.7 OUTSTANDING EXPENSES

The time-lag in payment of wages and other expenses will help in estimating the amount of outstanding expenses. For example, if monthly payments for wages and expenses are estimated at Rs. 15,000 and a time lag of 15 days in payment is estimated the amount of outstanding expenses on an average will amount to Rs. 7,500.

Having determined the amount of various current assets and current liabilities, the amount of working capital can be calculated by any of the following two methods:

i. By considering the total amount of current assets and current liabilities.
ii. By considering only the cash cost of current assets and current liabilities.

32.8. ILLUSTRATION OF WORKING CAPITAL

A proforma cost sheet of a company provides the following particulars:

Amount per unit (Rs.)

Elements of cost:

<table>
<thead>
<tr>
<th>Elements of cost</th>
<th>Amount per unit (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials 80</td>
<td>80</td>
</tr>
<tr>
<td>Direct labour 30</td>
<td>30</td>
</tr>
<tr>
<td>Overheads 60</td>
<td>60</td>
</tr>
<tr>
<td>Total cost 170</td>
<td>170</td>
</tr>
<tr>
<td>Profit 30</td>
<td>30</td>
</tr>
<tr>
<td>Selling price 200</td>
<td>200</td>
</tr>
</tbody>
</table>

The following further particulars are available:

Raw materials in stock, on average one month; Materials are in process, on average half a month; Finished goods in stock, on average one month.

Credit allowed by suppliers is one month; credit allowed to debtors is two months; lag in payment of wages is 2 weeks; lag in payment of overhead expenses is one month; one-fourth of the output is sold against cash; cash in hand and at bank is expected to be Rs. 25,000. You are required to prepare a statement showing the working capital needed to finance a level of activity of 1,04,000 units of production.

You may assume that production is carried on evenly throughout the year and wages and overheads accrue similarly.

SOLUTION

Statement showing Determination of Net Working Capital

<table>
<thead>
<tr>
<th>(A) Current assets:</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Stock of materials for 1 month</td>
<td>6,40,000</td>
</tr>
<tr>
<td>ii. Working-in-progress for ½ month</td>
<td>3,20,000</td>
</tr>
<tr>
<td>(a) Material</td>
<td>1,20,000</td>
</tr>
<tr>
<td>(b) Labour</td>
<td>2,40,000</td>
</tr>
<tr>
<td>(c) Overheads</td>
<td>4,80,000</td>
</tr>
<tr>
<td>iii. Finished goods for 1 month</td>
<td>20,40,000</td>
</tr>
<tr>
<td>(a) Material</td>
<td>25,000</td>
</tr>
</tbody>
</table>
### Financial Management & Cost Accounting

<table>
<thead>
<tr>
<th>(b) Labour</th>
<th>47,45,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c) Overheads</td>
<td></td>
</tr>
<tr>
<td>iv. Debtors for 2 months</td>
<td></td>
</tr>
<tr>
<td>v. Cash in hand and at bank</td>
<td></td>
</tr>
<tr>
<td>Total investments in current assets</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(B) Current liabilities:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Creditors...1 month:</td>
<td>6,40,000</td>
</tr>
<tr>
<td>1month’s purchase of raw materials i.e.,</td>
<td>4,80,000</td>
</tr>
<tr>
<td>ii. Lag in payment of expenses</td>
<td>90,000</td>
</tr>
<tr>
<td>(a) Overheads 1 month</td>
<td>12,10,000</td>
</tr>
<tr>
<td>(b) Labour (1/2 month)</td>
<td></td>
</tr>
<tr>
<td>Total estimate of current liabilities</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(C) Net working capital</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>= Current assets – Current liabilities</td>
<td></td>
</tr>
<tr>
<td>=Rs. 47,45,000 – Rs. 12,10,000</td>
<td></td>
</tr>
<tr>
<td>=Rs. 35,35,000</td>
<td></td>
</tr>
</tbody>
</table>

**Working Notes and Assumptions**

i. 26,000 units have been sold for cash. Therefore, credit sales pertain to 78,000 units only.

ii. Year has 52 weeks.

iii. a) Profits may or may not be a source of working capital

   b) Profits are to be adjusted for income-tax and dividend payments. For these reasons profits have been ignored

iv. All overheads are assumed to be variable. Presence of depreciation element in overheads will lower the working capital requirement. In the absence of such a figure, an estimate of the amount cannot be made.
LESSON 33
RECEIVABLES MANAGEMENT, CASH MANAGEMENT

33.1 Introduction

The assessment of working capital requirements for the future can be made by determining the amount of current assets and current liabilities: The assessment of working capital requirements can be made on the basis of the current assets required for the business and the credit facilities available for the acquisition of such current assets, i.e., current liabilities. The broad categories of the 'current assets' and the 'current liabilities' have already been explained.

33.2. CREDIT POLICY VARIABLES

The important dimensions of a firm's credit policy are:

- Credit standards
- Credit period
- Cash discount
- Collection effort

These variables are related and have a bearing on the level of sales, bad debt loss, discounts taken by customers, and collection expenses. For purposes of expository convenience we examine each of these variables independently.

Credit Standards

A pivotal question in the credit policy of a firm is; What standard should be applied in accepting or rejecting an account for credit granting? A firm has a wide range of choice in this respect. At one end of the spectrum, it may decide not to extend credit to any customer, however strong his credit rating may be. At the other end, it may decide to grant credit to all customers irrespective of their credit rating. Between these two extreme positions lie several possibilities, often the more practical ones.

Credit Period

The credit period refers to the length of time customers are allowed to pay for their purchases. It generally varies from 15 days to 60 days. When a firm does not extend any credit, the credit period would obviously be zero. If a firm allows 30 days, say, of credit, with no discount to induce early payments, its credit terms are stated as net 30.

Lengthening of the credit period pushes sales up by including existing customers to purchase more and attracting additional customers. This is, however, accompanied by a larger investment in debtors and higher incidence of bad debt loss. Shortening of the credit period would have opposite influences. It tends to lower sales, decrease investment in debtors, and reduce the incidence of bad debt loss.

Cash Discount

Firms generally offer cash discounts to induce customers to make prompt payments. The percentage discount and the period during which it is available are reflected in the credit terms. For example,
credit terms of 2/10, net 30 mean that a discount of 2 percent is offered if the payment is made by the tenth day; otherwise the full payment is due by the thirtieth day.

**Collection Effort**
The collection programme of the firm, aimed at timely collection of receivables, may consist of the following:

- Monitoring the state of receivables
- Despatch of letters to customers whose due date is approaching
- Telegraphic and telephonic advice to customers around the due date
- Threat of legal action to overdue accounts
- Legal action against overdue accounts

A rigorous collection programme tends to decrease sales, shorten the average collection period, reduce bad debt percentage, and increase the collection expenses. A lax collection programme, on the other hand, would push sales up, lengthen the average collection period, increase the bad debt percentage, and perhaps reduce the collection expense.

33.3. CASH MANAGEMENT

Why does a firm need cash? As John Maynard Keynes put forth, there are three possible motive for holding cash.

**Transaction Motive** : Firms need cash to meet their transaction needs. The collection of cash (from sale of goods and services, sale of assets, and additional financing) is not perfectly synchronized with the disbursement of cash (for purchase of goods and services, acquisition of capital assets, and meeting other obligations). Hence, some cash balance is required as a buffer.

**Precautionary Motive**: There may be some uncertainty about the magnitude and timing of cash inflows from sale of goods and services, sale of assets, and issuance of securities. Likewise, there may be uncertainty about cash outflows on account of purchases and other obligations. To protect itself against such uncertainties, a firm may require some cash balance.

**Speculative Motive** : Firms would like to tap profit making opportunities arising from fluctuations in commodity prices, security prices, interest rates, and foreign exchange rates. A cash-rich firm is better prepared to exploit such bargains. However, for most firms their reserve borrowing capacity and marketable securities would suffice to meet their speculative needs.

33.4. CASH BUDGETING

Cash budgeting or short – term cash forecasting is the principal tool of cash management. Cash budgets, routinely prepared by business firms, are helpful in (i) estimating cash requirements, (ii) planning short – term financing, (iii) scheduling payment in connection with capital expenditure projects, (iv) planning purchases of materials, (v) developing credit policies, and (vi) checking the accuracy of long – term forecasts.

Firms use multiple short – term forecasts, of varying length and detail, suited to meet different needs. The commonly used designs for short – term cash forecasts are : (i) one year divided into quarters or months, (ii) one quarter divided into months, and (iii) one months divided into weeks. A firm hard pressed with liquidity crunch, may even prepare a weekly cash forecast divided into days.
The point to be emphasized here is that these multiple formats serve differing purposes and should not be regarded as mutually exclusive.

**Receipts and Payment Method**

The cash budget prepared under this method shows the timing and magnitude of expected cash receipts and payments over the forecast period. It includes all expected receipts and payments irrespective of how they are classified in accounting. The items of cash receipts and cash payments and the bases for estimating them are shown in Exhibit 27.1.

From exhibit 27.1 it is clear that the receipts and payments method of cash forecasting *inter alia* calls for information about estimated sales, production plan, purchasing plan, financing plan, and capital expenditure budget. The most crucial input in the entire process, of course, is the figure of estimated sales because various business plans are closely related to estimated sales.

**ILLUSTRATION**

The preparation of cash budget may be illustrated with an example. ABC Company manufactures plastic bags. Its estimated sales for the period January 2010 through of course, I would not like to press the point further for an already hard pressed firm.

**Table-33.1: Items of Cash Receipts and Payments and the Basis of Their Estimation**

<table>
<thead>
<tr>
<th>Items</th>
<th>Basis of Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash sales</td>
<td>Estimated sales and its division between cash and credit sales.</td>
</tr>
<tr>
<td>Collection of accounts receivable</td>
<td>Estimated sales, its division between cash and credit sales, and collection pattern.</td>
</tr>
<tr>
<td>Interest and dividend receipts</td>
<td>Firm's portfolio of securities and return expected from the portfolio.</td>
</tr>
<tr>
<td>Increase in loans/deposits and issue of securities</td>
<td>Financing plan. Proposed disposal of assets. Estimated purchases and its division between cash and credit purchases.</td>
</tr>
<tr>
<td>Sale of assets</td>
<td></td>
</tr>
<tr>
<td>Cash Purchases</td>
<td></td>
</tr>
<tr>
<td>Payment of purchases</td>
<td>Estimated purchases, its division between cash purchases and credit purchases, and terms of credit purchases.</td>
</tr>
<tr>
<td>Wages and salaries</td>
<td>Manpower employed and wages and salaries structure.</td>
</tr>
<tr>
<td>Manufacturing expenses</td>
<td>Production Plan.</td>
</tr>
<tr>
<td>General, administration and selling expenses</td>
<td>Administration and sales personnel and proposal sales promotion and distribution expenditure.</td>
</tr>
<tr>
<td>Capital equipment purchases</td>
<td>Capital expenditure budget and payment pattern associated with capital equipment purchases.</td>
</tr>
<tr>
<td>Repayment of loans and retirement of securities</td>
<td>Financing plan.</td>
</tr>
</tbody>
</table>

June 2010 are as follows: Rs. 100,000 per month from January through March and Rs. 120,000 per month from April through June. The sales for November and December of the previous year have been Rs. 100,000 each. Cash and credit sales are expected to be 20 percent and 80 percent
respectively. The receivables, on an average, one month from the date of sale and the balance 50 percent, on an average, two months from the date of sale. No bad debt losses are expected to occur. Other anticipated receipts are: (i) Rs. 50,000 from the sale of a machine in March, and (ii) Rs. 2,000 interest on securities in June. Given this information, the forecasted cash receipts have been tabulated in Table 37.2(exhibit 37.3).

We no consider the forecast of cash payments. ABC company plans to purchase materials worth Rs. 40,000 in January and February and materials worth Rs. 48,000 each month from March through June. The payments for these purchases are made approximately a month after the purchase. The purchases for the December of the previous year have been Rs. 40,000 for which payment will be made in January 2010. Miscellaneous cash purchase of Rs. 2,000 per month are planned from January through June. Wage payments are expected to be Rs. 15,000 per month; general administrative and selling expenses are expected to be Rs. 10,000 per month. Dividend payment of Rs. 20,000 and tax payment of Rs. 20,000 are scheduled in June 2010. A machine worth Rs. 50,000 is proposed to be purchased on cash in March, 2010. Given this information, the proposed payments are shown in Table 37.3. (exhibit 37.3)

**Table-Exhibit 37.2: Forecast of Cash Receipts**

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1,00,000</td>
<td>1,00,000</td>
<td>1,00,000</td>
<td>1,20,000</td>
<td>1,20,000</td>
<td>1,20,000</td>
</tr>
<tr>
<td>Credit Sales</td>
<td>80,000</td>
<td>80,000</td>
<td>80,000</td>
<td>96,000</td>
<td>96,000</td>
<td>96,000</td>
</tr>
<tr>
<td>Collection of accounts receivable</td>
<td>80,000</td>
<td>80,000</td>
<td>80,000</td>
<td>80,000</td>
<td>88,000</td>
<td>96,000</td>
</tr>
<tr>
<td>Cash Sales</td>
<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
<td>24,000</td>
<td>24,000</td>
<td>24,000</td>
</tr>
<tr>
<td>Receipt from sale of equipment</td>
<td>5,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td>Interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cash receipts (3 + 4 + 5 + 6)</td>
<td>1,00,000</td>
<td>1,00,000</td>
<td>1,05,000</td>
<td>1,04,000</td>
<td>1,12,000</td>
<td>1,22,000</td>
</tr>
</tbody>
</table>

**Table-Exhibit 37.3 Forecast of Cash Payments**

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material purchase</td>
<td>40,000</td>
<td>40,000</td>
<td>48,000</td>
<td>48,000</td>
<td>48,000</td>
<td>48,000</td>
</tr>
<tr>
<td>Credit material purchases</td>
<td>40,000</td>
<td>40,000</td>
<td>48,000</td>
<td>48,000</td>
<td>48,000</td>
<td>48,000</td>
</tr>
<tr>
<td>Payment of accounts payable</td>
<td>40,000</td>
<td>40,000</td>
<td>40,000</td>
<td>48,000</td>
<td>48,000</td>
<td>48,000</td>
</tr>
<tr>
<td>Miscellaneous cash purchases</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Wages</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
<td>15,000</td>
</tr>
</tbody>
</table>
6. Manufacturing expenses 20,000 20,000 20,000 20,000 20,000 20,000
7. General administrative and selling expenses 10,000 10,000 10,000 10,000 10,000 10,000
8. Dividend - - - - - 20,000
9. Tax - - - - - 20,000
10. Capital expenditure - - - - - -
(3+4+5+6+7+8+9+10) 87,000 87,000 1,37,000 95,000 95,000 1,35,000

Assuming that the cash balance on 1\textsuperscript{st} January, 2010 is Rs. 22,000 and the minimum cash balance required by the firm is Rs. 20,000, we can now prepare a summary statement. This statement, shown in Exhibit, 27.4, calculates the surplus / deficit in relation to the minimum required. From exhibit 27.4 it can be seen that a cash shortage is expected to occur during March and it would disappear in April as the business operations result in cash inflows. The storage expected in March is due to the proposed capital expenditure of Rs. 50,000. The management can avoid this shortage by adopting one or more of the following means : (i) postponement of asset acquisition to April, (ii) deferring a portion of the payment for the capital asset to April, and (iii) resorting to short-term borrowing for the month of March.

<table>
<thead>
<tr>
<th>Exhibit 37.4 Summary Cash Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>11. Opening cash Balance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>12. Receipts</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>13. Payments</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>14. Net Cash flow (2-3)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>15. Cumulative net cash flow</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>16. Opening Cash Balance + Cumulative net Cash Flow (1 + 5)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>17. Minimum cash balance required</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>18. Surplus or deficit in relation to the</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>22,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,00,000</td>
<td>1,00,000</td>
<td>1,05,000</td>
<td>1,04,000</td>
<td>1,12,000</td>
<td>1,22,000</td>
</tr>
<tr>
<td>87,000</td>
<td>87,000</td>
<td>1,37,000</td>
<td>95,000</td>
<td>95,000</td>
<td>1,35,000</td>
</tr>
<tr>
<td>13,000</td>
<td>13,000</td>
<td>(32,000)</td>
<td>3,000</td>
<td>17,000</td>
<td>(13,000)</td>
</tr>
<tr>
<td>13,000</td>
<td>26,000</td>
<td>(6,000)</td>
<td>9,000</td>
<td>20,000</td>
<td>7,000</td>
</tr>
<tr>
<td>35,000</td>
<td>48,000</td>
<td>16,000</td>
<td>25,000</td>
<td>42,000</td>
<td>29,000</td>
</tr>
<tr>
<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>15,000</td>
<td>28,000</td>
<td>4,000</td>
<td>5,000</td>
<td>22,000</td>
<td>9,000</td>
</tr>
<tr>
<td>minimum cash balance required (6-7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lesson 34
Financing Of Working Capital

34.1 INTRODUCTION

It has already been stated that the working capital is the difference between current assets and the current liabilities. In order to estimate the requirements of working capital one has to forecast the amount of current assets and the current liabilities. However, in case of certain current assets the cash costs involved are much less than the value of the current assets. For example, if the sundry debtors are estimated at Rs. 1,00,000 and the cost of production of the goods with them is only Rs. 75,000, the amount of funds blocked with them is only Rs. 75,000 and not Rs. 1,00,000. Moreover, if the cost of production includes a sum of Rs. 5,000 as depreciation the amount of actual funds blocked with them is only Rs. 70,000. This is equally true of the cost of finished goods and work-in-progress which may include the amount of depreciation. Many experts, therefore, calculate the working capital requirements by taking into account only the cash cost blocked in sundry debtors stock of work-in-progress and finished goods. According to this approach the debtors are computed not as a percentage of sales but as a percentage of cash costs. Similarly the finished goods and work-in-progress are valued according to cash cost. Planning is the essence of business management. It is only by planning that management can realistically view future problems, analyze them, study their impact on the activities of business and decide on the policy to be followed for achieving the objective of making profits.

Profit planning is necessarily a part of operations planning. It is the basis of planning cash, capital expenditure and pricing. It involves the prediction of most aspects of a firm’s operations. While enterprises usually plan its sales, activities and costs and then calculates the profit it hopes to make, in the case of profit planning. However, a target of profit is laid down in advance and then decision is taken regarding sales, activities and costs required to achieve the targets. Thus, "Profit planning is the planning of future operations to attain maximum profit or to maintain a specified level of profit".

34.2. SOURCES OF SHORT TERM FINANCE

- Acruals
- Trade Credit
- Working Capital advance by commercial banks
- Regulation of bank finance
- Public deposits
- Inter – corporate deposits
- Short – Term loans from financial institutions
- Right debentures for working capital
Accruals
The major accrual items are wages and taxes. These are simply what the firm owes to its employees and to the government. Wages are usually paid on a weekly, fortnightly, or monthly basis – between payments, the amounts owed but not yet paid are shown as accrued wages on the balance sheet. Income tax is payable quarterly and other taxes may be payable half – yearly or annually. In the interim, taxes owed but not paid may be shown as accrued taxes on the balance sheet.

Accruals vary with the level of activity of the firm. When the activity level expands, accruals increase and when the activity level contracts accruals decrease. As they respond more or less automatically to changes in the level of activity, accruals are treated as part of spontaneous financing.

Trade credit
Trade credit represents the credit extended by the suppliers of goods and services. It is a spontaneous source of finance in the sense that it arises in the normal transactions of the firm without specific negotiations, provided the firm is considered credit worthy by its suppliers. It is an important source of finance representing 25 percent to 50 percent of short – term financing.

Working capital advance by commercial banks
Working capital advance by commercial banks represents the most important source for financing current assets. This section discusses the following aspects of this source of finance: (i) application and processing, (ii) sanction and terms of condition, (iii) forms of bank finance, (iv) nature of security and (v) margin amount.

Forms of Bank Finance
Working capital advance is provided by commercial banks in three primary ways: (i) cash credits/overdrafts, (ii) loans, and (iii) purchase / discount of bills. In addition to these forms of direct finance, commercials banks help their customers in obtaining credit from other sources through the letter of credit arrangement.

Cash Credits / Overdrafts Under a cash credit or overdraft arrangement, a pre – determined limit for borrowing is specified by the bank. The borrower can draw as often as required provided the outstandings do not exceed the cash credit / overdraft limit. The borrower also enjoys the facility of repaying the amount, partially or fully, as and when he desired interest is charged only on the running balance, not on the limit sanctioned. A minimum charge may be payable, irrespective of the level of borrowing, for availing this facility. This form of advance is highly attractive from the borrower's point of view because while the borrower has the freedom of drawing the amount in installments as and when required, interest is payable only on the amount actually outstanding.

Loans These are advances of fixed amounts which are credited to the current account of the borrower or released to him in cash. The borrower is charged with interest on the entire loan amount, irrespective of how much he draws. In this respect this system differs markedly from the overdraft or cash credit arrangement wherein interest is payable only on the amount actually utilized. Loans are payable either on demand or in periodical installments. When payable on demand, loans are
supported by a demand promissory note executed by the borrower. There is often a possibility of renewing the loan.

**Purchase / Discount of Bills** A bill arises out of a trade transaction. The seller of goods draws the bill on the purchaser. The bill may be either clean or documentary (a documentary bill is supported by a document of title to goods like a railway receipt or a bill of lading) and may be payable on demand or after a usance period which does not exceed 90 days. On acceptance of the bill by the purchaser, the seller offers it to the bank for discount / purchase. When the bank discount / purchases the bill it releases the funds to the seller. The bank presents the bill to the purchaser (the acceptor of the bill) on the due date and gets its payment.

The Reserve Bank of India launched the new bill market scheme in 1970 to encourage the use of bill as an instrument of credit. The objective was to reduce the reliance on the case credit arrangement because of its amenability to abuse. The new bill market scheme sought to promote an active market for bills as a negotiable instrument so that the lending activities of a bank could be shared by other banks. It was envisaged that a bank, when Likewise a bank which has surplus funds would invest in bills. Obviously for such a system to work, there has to be a lender of last resort which can come to the succor of the banking system as a whole. This role naturally has been assumed by the Reserve Bank of India which rediscounts bills of commercial banks up to a certain limit. Despite the blessings and support of the Reserve Bank of India, the new bill market scheme has not functioned very successfully in practice.

**Letter of Credit** A letter of credit is an arrangement whereby a bank helps its customers to obtain credit from its (customer's) suppliers. When a bank opens a letter of credit in favour of its customers for some specific purchases, the bank undertakes the responsibility to honour the obligation of its customer, should the customer fail to do so. To illustrate suppose a bank opens a letter of credit in favour of A for some purchases that A plants to make from B. If A does not make payment to B within the credit period offered by B, the bank assume the liability of A for the purchases covered by the letter or credit arrangement. Naturally, B would hardly have any hesitation to extend credit to A when a bank opens a letter of credit arrangement the credit is provided by the supplier but the risk is assumed by the bank which opens the letter of credit. Hence, this is an indirect form of financing as against overdraft, cash credit, loans, and bill purchasing / discounting which are direct forms of financing. Note that in direct financing the bank assumes risk as well as provides financing.

### 34.3. INTER – CORPORATE DEPOSITS

A deposit made by one company with another, normally for a period up to six months, is referred to as an inter – corporate deposit. Such deposits are usually of three types:

**Call Deposits** In theory, a call deposit is withdrawable by the lender on giving a day's notice. In practice, however, the lender has to wait for at least three days. The interest rate on such deposits may be around 12 percent annum.

**Three – Months Deposits** More popular in practice, these deposits are taken by borrows to tide over a short – term cash inadequacy that may be caused by one or more of the following factors : disruption in production, excessive imports of raw material, tax payment, delay in collection, dividend
payment, and unplanned capital expenditure. The interest rate on such deposits is around 15 percent annum.

**Six – Months Deposits** Normally lending companies do not extend deposits beyond this time frame. Such deposits, usually made with first – class borrowers, carry an interest rate of around 18 percent per annum.

**Characteristics of the Inter – Corporate Deposits Market** It may be of interest to note the following characteristics of the inter – corporate deposit market.

**Lack of Regulation** The lack of legal hassles and bureaucratic red tape makes an inter - corporate deposit transaction very convenient. In a business environment otherwise characterized by a plethora of rules and regulations, the evaluation of the inter – corporate deposit market is an example of the ability of the corporate sector to organize itself in a reasonably orderly manner.

**Secrecy** The inter – corporate deposit market is shrouded in secrecy. Brokers regard their lists of borrowers and lenders as guarded secrets. Tightlipped and circumspect, they are somewhat reluctant to talk about their business. Such desclosures, they apprehend, would result in unwelcome competition and undercutting of rates.

**Importance of Personal Contacts** Brokers and lenders argue that they are guided by a reasonably objective analysis of the financial situation of the borrowers. However, the truth is that lending decisions in the inter-corporate deposit markets are based on personal contacts and market information which may lack reliability. Given the secrecy that shrouds this operation and the non – availability of hard data, can it be otherwise?
Lesson 35
Cost Volume Profit Analysis

35.1 INTRODUCTION

Herman C Helser In his book 'Budgeting -Principles and Practice' writes that, "the most significant single factor in profit planning of the average business is the relationship between the volumes of business, cost and profit". These days in management accounting, a great deal of importance is being attached to cost volume profit relationship which, as its name implies, is an analysis of three different factors -costs; volume and profit. In this case an analysis is made to find out:

What would be the cost of production under different circumstances?
What has to be the volume of production?
What profit can be earned?
What is the difference between the selling price and cost of production?

35.2 CONCEPT OF COST VOLUME PROFIT RELATIONSHIP

Most business decisions are an exercise in the selection of alternatives whether to accept a certain business at the specified price or not, whether to aggressively push the sales of one product or other, whether to exploit more intensively one or the other of the territories. In a scheme of cost volume profit analysis, an attempt is made to measure variations of cost with volume. Cost may depend on volume which in turn depends on demand; profits depend on the price that can be obtained for the goods manufactured and placed in the market less the, cost thereof. Moreover, a business must incur certain minimum expenditure on fixed and semi-variable charges. Such expenditure must be paid out of marginal profit earned on each unit of production with the result that a minimum volume of 'business become essential, the direct variable cost of each article sold being covered by the sale proceeds.

CVP analysis is an extension of marginal costing. It makes use of the principles of marginal costing and is an important tool of short term planning. It is more relevant where the proposed changes in the level of activity are relatively small.

CVP analysis is useful to the finance manager in the following respects:

1) It helps him in forecasting the profit fairly accurately.
2) It is helpful in setting" up flexible ,budgets, since on the basis of this relationship, he can ascertain the cost, sales-and profits at different levels of activity.
3) Since costs and profits depend upon volume, the effects of changes in volume should be considered while reviewing costs and profits achieved.
4) Thus, performance evaluation which is necessary for cost control is rendered possible by a study of the relationship of these variables.
5) It helps in formulating price policy by projecting the effect which different price structures will have on cost and profits.

6) It helps in determining the amount of overhead cost to be charged at various levels of operations, since overhead rates are generally pre-determined on the basis of a selected volume of production.

Thus CVP analysis is an important medium through which the management can have an Insight into effects on profit on account of variations in costs (both fixed and variable) and sales (both volume and value) and take appropriate, decisions. A widely used technique which facilitates the study of CVP relationship is the Break Even Analysis.

35.3 BREAK EVEN ANALYSIS

A logical extension of marginal costing is the concept of break even analysis. It is based 'on the same principle' of classifying the operating expenses into fixed and variable. Now a days it has become a powerful instrument in the hands of policy makers to maximize profits.

The term “break even analysis” is interpreted in the narrower as well as broader sense. Used in its narrower sense, it is concerned with finding out the breakeven point i.e., the level of activity where total cost equals total selling price. In other words, breakeven point is the level of sales volume at which there is neither profit nor loss. Considered, therefore in its literal sense, the term break even analysis seems to be misleading. It implies that the only concern of management is that level of activity at which no profit is made and no loss is suffered. Accordingly, the term-is considered by some as a misnomer. However, some feel that the term break even analysis is appropriate up to the point at which costs become equal to the revenue and beyond this point it is the study of the cost volume profit relationship. In its broader sense, break even analysis means the system of analysis which determines the probable profit at any level of activity.

Fig- 5.1: Breakeven chart
Lesson 36
Determining Break Even Points, Break Even Charts, Margin of Safety

36.1 INTRODUCTION

Usually, 'Break even analysis' is presented graphically as this method of, visual presentation is particularly well suited to the needs of business owing to the manager being able to appraise the situation at a glance. A visual representation of the relationship between costs-volume and profit is known as the break even chart. Such a chart not' only depicts the level of activity where there will be neither loss nor profit but also shows the profit or loss at various levels of activity. The break even chart means "a chart which shows profit or loss at various levels of activity, the level at which neither profit nor loss1s shown being termed the breakeven point". This may also take the form of a chart on which is plotted the relationship either of total cost of sales to sales or of fixed costs to contribution. Thus it is a graphical presentation of cost and revenue data so as to show their inter relationship at different levels of activity.

Break even charts are frequently used and needed where a business is new or where it is experiencing trade difficulties. In these cases the chart assists the management in considering the advantages and disadvantages of marginal sales. However, in a highly profitable enterprise, there is little need of Weak even charts except when studying the implications of a major expansion scheme involving a heavy increase in fixed charges.

There are three methods of drawing a break even chart. These have been explained with the help of the following illustration:

36.2 ILLUSTRATION

Calculate the Break Even Point and Profit if output is 50,000 units by drawing a break even chart.

Table- 36.1: Break even charts

<table>
<thead>
<tr>
<th>Production (units)</th>
<th>Fixed Expenses Rs.</th>
<th>Variable cost per unit Rs.</th>
<th>Selling price per unit Rs.</th>
<th>Total cost Rs.</th>
<th>Total sales Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>1,50,000</td>
<td>---</td>
</tr>
<tr>
<td>10,000</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>2,50,000</td>
<td>1,50,000</td>
</tr>
<tr>
<td>20,000</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>3,50,000</td>
<td>3,00,000</td>
</tr>
<tr>
<td>30,000</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>4,50,000</td>
<td>4,50,000</td>
</tr>
<tr>
<td>40,000</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>5,50,000</td>
<td>6,00,000</td>
</tr>
<tr>
<td>50,000</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>6,50,000</td>
<td>7,50,000</td>
</tr>
<tr>
<td>60,000</td>
<td>1,50,000</td>
<td>10</td>
<td>15</td>
<td>7,50,000</td>
<td>9,00,000</td>
</tr>
</tbody>
</table>
Solution

36.2.1 First method

On the X axis of the graph is plotted the number of units produced, sold and on the Y axis are shown costs and sales revenues.

The fixed cost line is drawn parallel to X axis. This line indicates that fixed expenses remain the same with any volume of production. The variable costs for different levels of activity are plotted over the fixed cost line at zero volume of production. This line can also be regarded as the total cost line because it starts from the point where fixed cost has been incurred and variable cost is zero. Sales values at various levels of output are plotted joined and the resultant line is the sales line. The sales line will cut the total cost line at a point where the total costs are equal to the total revenues and this point of intersection of two lines is known as breakeven point - the point of no profit no loss. The number of units to be produced at the breakeven point is determined by drawing a perpendicular line to the X axis from the point of intersection and measuring the horizontal distance from the zero point to the point at which the perpendicular line is drawn- The sales value at the breakeven point is determined by drawing a perpendicular line to the Y axis from the point of intersection and measuring the vertical distance from the zero point to the point at which the perpendicular line is drawn. Loss and profit are as have been shown in the chart which shows that if production is less than the breakeven point, the business shall be running at a loss and if the production is more than the breakeven level, profit shall result.

36.2.2 Second method

Another method of drawing a break even chart is showing the variable cost line first and thereafter drawing the fixed cost line above the variable cost line. The latter line is the total cost line because it is drawn over the variable cost line and represents the total cost (variable and fixed) at various levels of output. The difference under this method from the first method is that the fixed cost line shown above the variable cost line shall be parallel to the latter whereas under the first method, the fixed cost line is parallel to the X. axis. The sales line is drawn as usual and therefore the added advantage, of this method is that 'Contributions' at varying levels of output are automatically depicted in the chart. The breakeven point is indicated by the Intersection of the total cost line and the sales line. The break even chart on the basis of the data given in the illustration will appear as given below according to this method.

36.2.3 Third method

Under this method, fixed cost line is drawn parallel to the X- axis. The contribution line is drawn from the origin and this line goes up with increase in output. The sales line is plotted as usual. The question
of interactions of sales line with cost line does not arise because the total cost line is not drawn in this method. In this method, breakeven point is that point where the contribution line cuts the fixed or loss. If the contribution is more than the fixed expenses, profit shall arise and if the contribution is less than the fixed expenses loss shall arise. The graphical presentation of the given data according to this method is given in the previous page.

36.3 Cash Break-Even Chart

Though break even charts are generally based on profit and loss data and are used to estimate earnings most likely to result from given scale of operations such charts can also be made to yield information regarding the effect of changes in the scale of operations upon the cash situations of a business. However this requires a slight rearrangement and a few adjustments in the basic approach to the graphical representation of break even analysis.

Following points have to be kept on view in connection with the construction of cash break even charts:

i. Fixed expenses are to be divided into those that involve cash payments and those that do not involve cash payments, like depreciation.

ii. In view of the fact that cash break even chart is designed to show actual payments, and not expenses incurred, any lag in the payment of the items of variable cost must be taken into account.

iii. Consideration has also to be given to the period of credit allowed to debtors for arriving at cash to be received from them.

36.4 Illustration

From the following data, plot a Cash Break Even Chart.

Output and sales 1000 units
Selling price per unit Rs. 15
Fixed costs Rs. 5,000
(Including depreciation Rs. 1000)
Variable cost per unit
Assume there is no lag in payments. Rs. 5

SOLUTION

<table>
<thead>
<tr>
<th>Output (Units)</th>
<th>Variable Costs Rs.</th>
<th>Cash Fixed costs Rs.</th>
<th>Total Cash costs Rs.</th>
<th>Sales Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>1000</td>
<td>4000</td>
<td>5000</td>
<td>3000</td>
</tr>
<tr>
<td>400</td>
<td>2000</td>
<td>4000</td>
<td>6000</td>
<td>6000</td>
</tr>
<tr>
<td>600</td>
<td>3000</td>
<td>4000</td>
<td>7000</td>
<td>9000</td>
</tr>
<tr>
<td>800</td>
<td>4000</td>
<td>4000</td>
<td>8000</td>
<td>12000</td>
</tr>
<tr>
<td>1000</td>
<td>5000</td>
<td>4000</td>
<td>9000</td>
<td>15000</td>
</tr>
</tbody>
</table>
Cash Fixed Cost
Cash Break Even Point =
Cash Contribution per unit
= Rs. 4000/10 = 400 units.

36.5 ANGLE OF INCIDENCE

This is the angle formed the breakeven point at which the sales line cuts the cost line. This angle indicates rate at which profits are being made. Large angle of incidence is an indication that profits are being made at a high rate. On the other hand, a small angle indicates a low rate of profit and suggests that variable costs form a major part of cost of production. A large angle of incidence with a high, margin of safety indicates the most favorable position of a business and even the existence of monopoly conditions.

Margin of safety represents the amount by which the actual volume of sales exceeds those at the breakeven point. It is important that, there should be a reasonable margin of safety; otherwise a produced level of activity may prove disastrous. A low margin usually indicates high fixed costs so that profits are not made until there is high level of activity to absorb fixed costs.
Lesson-37

Profit Volume Analysis

37.1. INTRODUCTION
The profit volume analysis graph discloses the relationship of profit to volume. The P/V graph is also referred to as P/V chart. The utility of P/V graph is that it depicts the direct relationship between sales volume and quantum of profit fit different levels of activity. It is drawn on the basis of information as is required for the construction of break even chart.

The following steps are required to be adhered for the construction of P/V graph:
1. Profit and the fixed costs are represented on the vertical axis (Y) with appropriate scale. Total fixed costs are represented below the scale line on the left hand side of the vertical axis and the profits are shown on the right hand side above the sales line.
2. Sales are represented on the horizontal line (X) with appropriate scale. More precisely the horizontal line itself forms the sales line. This line is drawn in the middle of the graph so as to represent losses below this line and the profits above this line.
3. Points are plotted on the P/V graph for the required fixed costs and profits at two or three assigned sales levels. The points should be selected in such a manner that one point plotted must be below the sales line and the other must be above the sales line.
4. The origin of the curve (Profit line) would be a point of total fixed cost (treating the entire amount as loss) at zero sales level.
5. By drawing a line connecting the point of origin with two points already plotted (as per step 3). P/V graph is completed.

The P/V chart does not project the BEP alone. For it contains set of points whereby each point measures the amount of profit or loss in relation to sales volume.

37.2. Illustration

X Ltd. reports the following results for one year:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Variable costs</td>
<td>1,20,000</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>50,000</td>
</tr>
<tr>
<td>Net profits</td>
<td>30,000</td>
</tr>
</tbody>
</table>

37.3. ASSUMPTIONS UNDERLYING CVP ANALYSIS/BREAK-EVEN CHARTS

1. All costs can be separated in to fixed and variable costs.
2. Fixed costs remain constant at every level and they do not Increase or decrease with change in output.
3. Variable cost fluctuates per unit of output. In other words they vary in the same proportion in which the volume of output or sales varies.

4. Selling price will remain constant even though there maybe competition or change in volume of production.

5. Cost and revenue depend only on volume and not on any other factor.

6. Production and sales figures are either identical or changes in the Inventory at the beginning and at the end of the accounting period are not significant.

7. There is only one product or in the case of many products, product mix will remain unchanged.

37.4. ADVANTAGES OF BREAK EVEN CHARTS

1. Break even chart provides detailed and clearly understandable information to the management. Information provided by the break even chart can be understood by the management more easily than that contained in the profit and loss account and the cost estimates because it is the simple presentation of cost volume and profit structure of the company. It summarises a great mass of detailed information in a graph in such a way that its significance may be grasped even with a cursory glance.

2. Profitability of different products can be known with the help of break even charts, besides the level of no profit/no loss. The problem of managerial decision regarding temporary or permanent shut down of business or continuation at a Joss can be solved by break even analysis.

3. A break even chart is useful for studying the relationship of cost volume and profit. The effect of changes in fixed and variable costs at different levels of production can be demonstrated by the graph more legibly. Effect of changes in selling price can also be grasped quickly by the management by having a look at the break even chart. Thus it is very much useful for quick managerial decisions.

4. A break even chart is a tool for cost control because it shows the relative importance of the fixed cost and the variable cost.

5. A break even chart is helpful for forecasting long term planning, growth and stability.

6. The profit potentialities can be best judged from a study of the position of the break even point and the angle of incidence in the break even chart. The capacity can be utilized to the fullest extent possible and the economies of scale and capacity utilization can be effected. Comparative plant efficiencies can be studied through the break even chart.

37.5. LIMITATIONS

1. A break even chart is based on a number of assumptions which may not hold good. Fixed costs very beyond a certain level of output. Variable costs do not vary proportionately if the law of diminishing or increasing returns is applicable in the business. Sales revenue do not vary proportionately with changes in volume of sales due to reduction in selling price as a result of competition or increased production:

2. Only a limited amount of information can be presented in a single break even chart. If we have to study the changes of fixed costs, variable costs and selling prices, a number of charts have to be
3. The effect of various product mixes on profits cannot be studied from a single break even chart.
4. A break even chart does not take into consideration capital employed which is a very important factor in taking managerial decisions. Therefore, managerial decisions on the basis of break even chart may not be reliable.

37.6. ALGEBRAIC METHOD

The algebraic method of making CVP /BEP analysis is by the use of simple formula developed on the basis of the fundamental marginal costing equation, Sales -Variable cost = Fixed cost + Profit or S -V = F + P. This is the basic formula which is used to find out anyone of the factors when the other three are known.

Since contribution is the excess of sales revenue over marginal cost, the right-hand side of the equation may be substituted by C. Accordingly, the equation becomes Sales -Variable Cost = Contribution or S-V=C.

At the breakeven point, profit is nil. Therefore
S-V=F+O
We can find out the sales volume required to break even by multiplying both sides of the equation by S. The equation will then be
S (S-V) = F x S

Since S – V = C the equation can also be written as
Since again fixed cost plus profit must be equal to contribution, the equation can be put as
The BEP can also be shown by the formula
If it is desired to find out the breakeven point in terms of units, the break even sales may be divided by the price per unit. Alternatively break even sales in terms of units can be found out by the formula,

37.7. ILLUSTRATION

From the following particulars, calculate the level of sales to break even

| Units sold | 5000 |
| Selling price | Rs. 2 per unit |
| Variable cost | Rs. 1.50 per unit |
| Fixed cost | Rs. 2000 |

SOLUTION
Sales revenue for 4000 units at Rs. 2 per unit Rs. 8000
Less: Variable cost at Rs. 1.50 per unit Rs. 6000
Contribution 2000
Fixed cost 2000
Profit/Loss  NIL
Lesson-38

Introduction to Inventory Management

38.1. MEANING AND DEFINITION OF INVENTORY

Definition

"Inventory may be defined as the stock of any item or resources used by an Organization.". A manufacturing unit may generally have the stocks of following items

- Raw Materials
- Work in Process
- Finished Goods
- Spares, Tools, Lubricants etc.

Based on the above, Inventory may be divided into following types.

38.2. TYPES OF INVENTORIES

1) Raw Materials Inventory
It denotes the stock of all raw Materials, parts, components, assemblies which are used to manufacture the final product.

2) Work – in –Process Inventory or Semi-finished goods Inventory
It is the stock of semi-finished goods in the production department. These are the goods which have entered the production process but have not reached completion stage.

3) Finished goods inventory
It is the stock of goods which are completely manufactured and are ready for sale.

4) Maintenance, Repairs & Operation inventories
It represents the stock of maintenance, repair and operating supplies, which are useful for production process but do not form a part of the product. e.g. lubrication oil, soaps, brooms, light bulbs, machine repair parts etc.

A manufacturing firm will generally have all kinds of inventory Raw materials, WIP, Finished goods and spares inventory, whereas a wholesale retail firm will generally have a large amount of finished goods inventory. The level of inventory also depends upon the production cycle of the firm. For example organization which have long production cycles, carry large amount of inventories and hence a lot of capital is tied up in inventory. Whereas, Organizations having shorten production cycles require less inventory and less capital is tied up in inventory.

38.3. IMPORTANCE OF INVENTORY MANAGEMENT

On an average inventories are around 60% of current assets and around is-30% of total assets. It is therefore necessary to devote attention to inventories and ensure that the level of inventory is...
optimum (Neither large inventories nor to low inventories) and they are efficiently and effectively managed.

**Goal of inventory management:**

n has two conflicting choices regarding inventory:

a) Excessive Inventory: If the firm keeps large stocks of raw materials, finished goods, spares etc then it has an advantage that there is continuous and smooth production without any stoppage. Also the firm is always able to fulfill customer orders promptly and carry out marketing activities smoothly. But keeping excessive inventories has a big disadvantage that the investment in inventory is to huge.

b) Very Less Inventory (Inadequate Inventory): In this situation where a firm keeps very less stock of items then it has a benefit that very less capital is blocked in inventory. But in this case it is possible that the firm experience frequent production stoppage due to non availability of raw materials, spares etc.

It is possible that due to inadequate finished goods inventory the firm may loose sales. It may not be able to fulfilling customer orders in time. It may even result in permanent loss of customers and loss of good will. Both the extreme situations a) Excessive inventoried b) Inadequate inventories are not desirable and a good manager should try to avoid them. The aim of Inventory management should be to avoid both the danger points and try to determine the Optimum level of inventory and maintain the same.

**38.4. BENEFITS OF HOLDING INVENTORIES**

It is always beneficial for a firm to hold stocks of raw materials, work in process, finished goods, spares and tools. This is because inventories enable in decoupling of various activities, e.g. Raw materials Inventory decouple the purchasing activity and production activity. Hence stock of raw materials acts as a buffer between purchasing and production. The purchase department gets some flexibility and time to search for new suppliers, to negotiate for discounts, to order in bulk quantities etc.

Similarly Work-in–process inventory is useful in providing flexibility in providing scheduling. The stock of finished goods is kept in order to carry out smooth functioning of marketing and sales department. The marketing department functions somewhat independently and fulfills customer order promptly due to the stock of finished goods kept by the firm (Marketing department is not totally depended upon production for fulfillment of customer orders, due to the finished goods inventory).

**38.5. INVENTORY COSTS**

There are three types of Inventory costs:

a) Ordering Costs

b) Holding Costs/Carrying Costs/Storage Costs

c) Shortage Costs

**Ordering Cost**
Ordering costs are those costs which are incurred in placing the orders. Various ordering costs incurred are

- Cost involved in requisitioning
- Preparation of purchase orders
- Cost of expediting and follow-up
- Transaction Cost
- Receiving and Inspection Cost

Hence, ordering cost include all the cost which are incurred right from the point of Requisitioning to the point of receiving the materials and placing it in stores.

**Carrying cost/holding cost/storage costs:**

It is simply the cost incurred in storage of materials. The main costs involved in storing materials are-

- Rent of Warehouse, Insurance, Cost of spoilage, Cost due to pilferage
- Obsolescence Cost, Opportunity Cost of Capital blocked in inventory etc, Security cost of store house
- Cost of ventilation, utilities etc in the store house

So, It is clear from the above discussion that, two cost-ordering cost and storage Costs are involved when we purchase a material. Ordering Cost is the sum of all costs incurred up to the stage of receiving the material. Once the material has been received and placed in storehouse, all the costs which are incurred behind storing the material are called storage costs or holding costs.

**Shortage costs**

Shortage costs are those which the firm has to bear when there is a shortage of particular stock item. For example, the shortage of raw materials causes production stoppages, inefficient production, and delay in production schedules, customer dissatisfaction and loss of sales. It also includes the high costs associated with “Crash-procurement”. So from the above discussion it can be seen that there are only three kinds of inventory costs Ordering Cost, Holding Cost and Shortage Cost.
Lesson-39
Techniques of Inventory Management

39.1. TECHNIQUES OF INVENTORY MANAGEMENT
In order to achieve the goal of maintaining optimum level of inventories in a firm and ensuring that inventories are managed efficiently and effectively. Several inventory management techniques have been suggested. The main techniques are

1) EOQ model
2) ABC analysis
3) HML classification
4) SDE classification
5) VED classification
6) FSN Analysis
7) JIT (Just-in-Time)
8) Inventory turnover ratio

39.2. ECONOMIC ORDER QUANTITY (EOQ MODEL)
Before learning the EOQ model, it is necessary to understand the different types of costs in context of inventory.

EOQ Model
Assumption of EOQ Model
Main Assumptions are as follow

1) The annual demand (or annual usage) of the material is certain and known in advance.
2) The rate of usage of material is constant throughout the year (e.g. the usage rate does not fluctuate).
3) There are only two costs Ordering Cost and Holding Cost.
4) There is no Shortage Cost.
5) The price per unit of the material is constant.
6) The Ordering cost per order is constant.
7) The holding cost per unit per annum is constant.

Let,

\( Q = \) Order Size or Order Quantity
\( D = \) Annual demand or annual usage
\( S = \) Ordering Cost per Order or Cost of one Order
\( H = \) Holding cost per unit per annum (e.g. the cost incurred behind storage of one Unit of an item for one year)

Holding Cost is expressed in two ways

a) Rs. 20 per unit per annum.[p.u.p.a]
b) As a percentage of price (or inventory value)
   \( i = \) Percentage cost of inventory (%)
\[ p = \text{Price per unit of item} \]
\[ H = ip \]

(For example, if percentage carrying cost of an item is 24% p.a and its price per unit is Rs 100 then holding cost \( H = 0.24 \times 100 = \text{Rs 24} \))

1) Ordering Cost

Annual Ordering Cost = \( \text{Cost of one order} \times \text{No of order during the year} \)

Annual O.C = \( S \times (D/Q) \) (We can see that the relationship between ordering cost and order size is Inverse, E.g. if the order size \( Q \) increases, ordering cost decreases and vice versa)

Consider the following,

\[ D = 1200 \text{ units} \]
\[ S = \text{Rs 50 per order} \]

<table>
<thead>
<tr>
<th>Order Size</th>
<th>No of Orders</th>
<th>Ordering Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 units</td>
<td>12 Order</td>
<td>50 \times 12 = 600</td>
</tr>
<tr>
<td>200 units</td>
<td>6 Order</td>
<td>50 \times 6 = 300</td>
</tr>
<tr>
<td>600 units</td>
<td>2 Order</td>
<td>50 \times 2 = 100</td>
</tr>
</tbody>
</table>

As order size \( Q \) increases, the ordering cost decreases.

2) Holding Cost

Annual Holding = \( \text{Cost of holding one unit for one year} \times \text{Average Inventory} \)

\[ H.C = H \times (Q/2) \]

(Note: Average Inventory has been taken as \( Q/2 \))

Clearly, as order quantity \( Q \) increase the holding cost also increases.

Considering that there are only two (Variable) costs w.r.t inventory,

Total Inventory cost = Annual Ordering Cost + Annual Holding Cost

The goal of a inventory manager is to try to minimize this total inventory cost.

Graphical Presentation of inventory costs and order quantity:

**Fig-39.1: EOQ model**

From the Figure 39.1, it can be seen that,
Total inventory cost is Lowest, at the point where D.C and H.C Intersect. At the point of intersection total inventory cost is minimum, also.

\[ O.C = H.C \]
\[ \left( \frac{D}{Q} \right) \times S = \left( \frac{Q}{2} \right) \times H \]
\[ Q^2 = \frac{2DS}{H} \]

(This order quantity which minimize the total inventory cost is called Economic Order Quantity)

(Note: The equation for EOQ can also be dived in the following manner).

Total annual cost of Inventory= Annual purchase cost+ Annual ordering cost+ Annual holding cost

\[ T.C = \{ \text{Annual demand} \times \text{Price per unit} \} + \{ \text{Cost of one order} \times \text{No of orders during the year} \} + \{ \text{Cost of holding one unit for one year} \times \text{Average inventory} \} \]

\[ T.c = (D \times P) + \left( \frac{D}{Q} \right) \times S + (H \times \left( \frac{Q}{2} \right)) \]

In order to minimize this equation, we have to differentiate it w.r.t

\[ \frac{dT.C}{dQ} = O + \left\{ \frac{-DS}{Q^2} \right\} + \left\{ \frac{H}{2} \right\} \]

\[ OO = \left\{ \frac{-DS}{Q^2} \right\} + \left\{ \frac{H}{2} \right\} \]

The annual demand of electric switches in ABC LTD is 50,000 switches. If the ordering cost per order is Rs. 100 and carrying cost per unit per annum is Rs. 25, then find

a) EOQ
b) Annual ordering cost
c) Annual holding cost
d) Average Inventory
e) Number of order during the year

Solution:

\[ D = 50,000 \text{ units} \]
\[ H = \text{Rs 25 per unit per annum} \]
\[ S = \text{Rs 100} \]

a) EOQ = 632.455 units
b) Average Inventory = 632.455/2 = 316 units
c) No of orders = \( \frac{D}{Q} = \frac{50,000}{633} = 79 \) orders

Ordering Cost and Holding Cost
d) \( O.C = \left( \frac{D}{Q} \right) \times S = \left( \frac{50,000}{633} \right) \times 100 = \text{Rs 7905} \)

Hence, at EOQ we find O.C=H.C

For Komfort Ltd, the annual demand of an item is 75,000 units. The cost of placing one order for the company comes to Rs 35 per order. The price per unit of the item is Rs.5000 and the inventory
carrying cost is 2% per months.

a) Find EOQ, O.C, H.C, Average inventory, Number of Orders
b) If the supplier is willing to give 10% discount in price, if orders are placed in the size of 100 units. Should the company accept the discount or should it stick to its EOQ?

Solution:
Annual Demand D= 75,000 unit
Ordering cost = Rs 35 per order
Percentage carrying cost = 2% per month
Percentage carrying cost = 2% x 12 = 24% per annum
Note: All costs, ordering and Holding cost are to be expressed on annual basis.
P= Rs 5000 per unit

EOQ= 66.14 units
Average Inventory= Q/2 = 66.14/2 = 33.07
Number of order during the year = D/Q = 75,000/66.14= 1133.89 order= 1134 orders
O.C= (D/Q) x S = (75,000/66.14) x 35 = Rs. 39,688
H.C = (Q/2) x H = (Q/2) x i x P = (66.14/2) x 0.24xx 5000 = 39,688

The company is faced with two choices 1) Either to place orders at economic order size Q=66.14 units or 2) place orders in size of 100 units and get 10% discount in price.(Discount condition)

Answer
One thing to be kept in mind is that the goal of inventory manager is to minimize the total cost of inventory T.C. Hence the solution is clear, that orders should be placed at order quantity which gives the lowest cost of inventory. We have to find the total inventory cost T.C. for order size Q=66.14 unit and T.C at discount condition
P=5000 x 0.9= Rs. 4500 per unit

1) Total inventory Cost T.C at EOQ
T.C \_\text{EOQ}= \text{Annual Purchase Cost} + \text{Annual ordering Cost} + \text{annual holding cost}
T.C \_\text{EOQ}= (D x P) + ((D/Q) x S) + ((Q/2) x H)
= (D x P) + ((D/Q) x S) + ((Q/2) x iP)
= (75000 x 5000) + ((75000 x 35)/66.14) + ((66.14/2) x 0.24 x 5000)
= 37, 50, 00,000+39,687+39,687
=Rs. 37, 50, 79,372.44

2) T.C Discount
Discount Conditions are
When Q= 5000 units
P=Price=4500 per unit
T.C \_\text{Discount} = DP + ((D/Q) x S) + ((Q/2) x i x p)
= (75000x4500) + ((75000x35)/100)+((100/2)x0.24x4500)
= 33, 75, 00,000+26,250+54,000
\[ \text{T.C}_{\text{Discount}} = \text{Rs. 33, 75, 80,250} \]

\[ \text{T.C}_{\text{EOQ}} = 37, 50, 79,372 \]

As \( \text{T.C}_{\text{Discount}} \) is less than \( \text{T.C}_{\text{EOQ}} \) the company should accept the discount and the optimum order size is 100 units.
Lesson-40
Economic Order Quantity model and ABC analysis

40.1. ABC ANALYSIS
In 1906, Vilfredo Pareto, in a study of "Distribution of Wealth" in Milan Italy found that – only 20% of total population controlled 80% of total wealth. This principle of "Vital – few and Trivial many" has been known as Pareto's principle and has application in many situations in life. If we look at different items in the inventory of a firm, we may find that there may be around 20,000 to 50,000 or more inventory items in a large scale manufacturing unit. All the 20,000 inventory items are not of the same importance. They have different prices and different annual consumption values.

Let us further assume that, the total inventory value of all these 20,000 items is Rs. 50 crores. Then we can understand that all the 20,000 items do not have the same contribution in the total inventory value of 50 crores. Out of 20,000 items, it is possible that only 2000 items contribute Rs. 30 crores in total inventory. (A class items, which are less in number but have more inventory value)(65.70%)

Further, some 7000 items accounting for 12 crores of inventory value (20 – 25%) (B class items, which are moderate in number and have moderate contribution in total inventory value) (C Class items are those which are large in number but have very less contribution in inventory value)

By such a classification, it is clear for the manager to devote these resources in A – Class and B – Class items (rather than wasting efforts in controlling low value C – class items)

40.2. STEPS FOR MAKING ABC ANALYSIS
1. Find the Monetary value of Annual usage of the item by the following formula:-
Annual Usage = (Annual Demand or Annual consumption of the item in quantity) x Price per unit of the item
2. After calculating Annual usage for each item, arrange the items in the Descending order of their annual usage value.
3. From the above list, select a few TOP items (around 10 – 15% or total items) which account for around 65 – 70% of Total Annual Usage value. These items are called A– class items.
4. Similarly, select next few items, which are moderate in number (15-25% of total inventory items) and account for 25 – 35% of Total Annual Usage value. (AUV)

There is B – class items

Remaining large number of items which account for only 5 – 10% of annual usage values are classified as C – Class items.

Table-40.1: Example of ABC Analysis

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Annual Demand (Units)</th>
<th>Price per unit (Rs.)</th>
<th>Annual Usage (Rs) Value (A.U.V.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100</td>
<td>2500</td>
<td>25000</td>
</tr>
<tr>
<td>2</td>
<td>1000</td>
<td>2</td>
<td>2000</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1500</td>
<td>3000</td>
</tr>
<tr>
<td>4</td>
<td>100000</td>
<td>1.00</td>
<td>100000</td>
</tr>
</tbody>
</table>
The above table is then rearranged in the decreasing order of the Annual Usage Value of each item. From the Annual Usage Value column the first few items from the top of the column are selected and their total is determined. These items which are few in number but contribute almost 70 to 80% of the total inventory value are classified as A class items. Similarly the next items in table below A class items are the B class items, which are slightly more in number and have low inventory value. C Class items are those which are large in numbers and have only 5-10% contribution in the inventory value.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Annual Demand (Units)</th>
<th>Price per unit (Rs.)</th>
<th>Annual Usage Value (A.U.V.) (Rs)</th>
<th>% of total</th>
<th>Cumulative %</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>300000</td>
<td>0.5</td>
<td>150000</td>
<td>30.00%</td>
<td>30.00%</td>
<td>A (70%)</td>
</tr>
<tr>
<td>4</td>
<td>100000</td>
<td>1</td>
<td>100000</td>
<td>20.00%</td>
<td>50.00%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>50000</td>
<td>200</td>
<td>100000</td>
<td>20.00%</td>
<td>70.00%</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>200</td>
<td>200</td>
<td>40000</td>
<td>8.00%</td>
<td>78.00%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3750</td>
<td>8</td>
<td>30000</td>
<td>6.00%</td>
<td>84.00%</td>
<td>B (26.6%)</td>
</tr>
<tr>
<td>9</td>
<td>10000</td>
<td>6</td>
<td>30000</td>
<td>6.00%</td>
<td>90.00%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>2500</td>
<td>25000</td>
<td>5.00%</td>
<td>95.00%</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>400</td>
<td>20</td>
<td>8000</td>
<td>1.60%</td>
<td>96.60%</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>10</td>
<td>400</td>
<td>4000</td>
<td>0.80%</td>
<td>97.40%</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>350</td>
<td>10</td>
<td>3500</td>
<td>0.70%</td>
<td>98.10%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1500</td>
<td>3000</td>
<td>0.60%</td>
<td>98.70%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>100</td>
<td>25</td>
<td>2500</td>
<td>0.50%</td>
<td>99.20%</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1500</td>
<td>1</td>
<td>1500</td>
<td>0.30%</td>
<td>99.90%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>50</td>
<td>500</td>
<td>0.10%</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

Total 500000 100

**40.3. HML Classification**
In high medium and low (HML) classification all the inventory items are classified into these three groups High, Medium and Low on the basis of price per unit. The Management may decide regarding the meaning of H, M and L, for example they may decide that items having price per unit above 2,00,000 is H-Class, items with price per unit of 50,000 – 2,00,000 as M – Class and items whose price per unit is less than 50,000 as L – Class items. Generally such a classification is done at the department level.

40.4. VED (Vital, Essential, Desirable) CLASSIFICATION
Here inventory items are classified on the basis of the Importance of criticality of the item. Vital items are those items which are very critical from the organization’s point of view. Essential items are slightly less critical and of less importance for the organization. Desirable items are those items which do not have significant effect on the organization or its production or its business

40.5. SDE (Scarce, Difficult and Easy to procure)
In SDE classification, all the imputing items are classified on the basis of availability of the items. Scare items, which are short in supply and are mostly imported, are classified as s – class items. Items which are generally available indigenously but are difficult to procure are called D – Class items. E – Class items are easy to obtain and are available in the local markets and have large number of suppliers.

40.6. FSN (Fast Moving, Slow Moving and Non – Moving Items)
In FSN analysis, the inventory items are classified as Fast moving items, slow moving items and non – moving items. The basis of classification can be "The time elapsed since the date of last issue of the material". (Or the number of issues during the period)FSN analysis helps in finding out the Non – moving items which should be disposed off at the earliest.
Lesson-41
Purchase Procedure

41.1. PURCHASE PROCEDURE
Purchasing is one of the most important functions of materials management. In only economy purchasing is an activity. Be it a manufacturing, Non - manufacturing, profit making a non - profit organization all and engaged in the activity of purchasing. Ignoring Purchase function in our organization can be very costly. Inefficient purchasing can result into increased material cost, disrupted production schedules, poor quality of finished good etc and can create havocs for the organization.

41.2. PRINCIPLES OF PURCHASING (5 Rs. OF Purchasing)
The basic principles of purchasing are popularly known as 5 Rs. of Purchasing representing
- Right Quality
- Right Quantity
- Right time
- Right price and
- Right source.
  1. To purchase the right quality of materials.
  2. To purchase right quantity of material.
  3. To make materials available at right time.
  4. Materials should be purchased at right price.
  5. Materials should be purchased from right source.
Right Quality means the correct quality as per the requirement of the product / user. The quality should not be higher or lower than the required quality. Right Quantity means The quantity to be purchased should be decided by taking into consideration factors like EOQ, Discounts offered from supplier supply conditions of the item, etc. Materials should be purchased at Right Time i.e. neither too early or not too late. This decision can be taken by considering the lead time and Consumption rate of the item. Materials should be purchased at Right Price means the price should be in conformation to the quality, regularity of supply, the quality regularity of supply, financial capability of supplier. Purchasing from Right Source puts emphasis on considering several factors affecting supplier selection. Apart from price and quality several factors like - financial stability, goodwill, after - sales - support, ability to give market information, market trends etc should also be given weightage.

41.3. MAIN FUCTIONS OF PURCHASE DEPARTMENT
  1. Making purchases for stores from domestic and foreign source.
  2. Checking Purchase requisitions forms
  3. Searching selecting a supplier
5. Issuing purchase order checking legal conditions of a contract etc.
6. Follow-up of purchase order expediting, dealing with carriers, suppliers for shortages excess and rejection of material.
7. Receiving inspection
8. Maintains source of Purchase Records supplier evaluation and performance record etc.
9. Payment of the materials.

41.4. CENTRALIZED AND DECENTRALIZED PURCHASING
Centralized purchasing means the responsibility of purchasing bill the materials, equipments, suppliers on behalf of entire organization is given to only one Department - No individual department to given the authority to make purchases. Several Advantages of this system are
1. It eliminates the duplication of purchase effects made by individual departments and saves time and cost.
2. Due to centralized purchasing system, it is possible to consolidate the demand of various departments and place a bulk order. Due to bulk ordering these may be benefits of price discounts, cash discounts and favorable buying terms and conditions from the suppliers.
3. Centralized purchase system ensures that all the purchasing policies, records, practice etc are uniformly implemented only in the purchase department. Hence it avoids the confusion and complicity advising due to different policies and practices being adapted by different use departments.
4. It permits greater knowledge and skills of purchasing officers. This is especially important in manufacturing organization where efficient buying can reduce costs significantly.
5. There is a readily available data of surplus shortage, obsolete and scrap materials.

Decentralized purchasing means the responsibility of purchasing bill the materials, equipments, suppliers on behalf of entire organization is given to the user department. The user department has the final authority to make decisions regarding purchase.

Advantages of Decentralized purchasing
1. Decentralized purchasing given full authority and responsibility of purchasing materials to the unit manager or Departmental head or plant manager. This can be very important if material cost constitutes a major - portion of total cost.
2. The purchasing executive / manager become more familiar with the technical and functional aspects of the items being purchased.
3. The main advantages of decentralized purchasing is that is reduces the lead time of purchasing by reducing the processing and administrative times behind purchases authority and responsibility.
4. This system gives the purchasing executives and opportunity to develop local supply sources which leads to increased employee motivation and employee satisfaction.

41.5. STEPS OF PURCHASE PROCEDURE
1. Purchase requisitions.
2. Selection of supplier
3. Placing the order and its follow up
4. Receiving and inspecting the material
5. Checking invoices and passing for payment

(I) Purchase Requisitions

When there is a need to purchase a particular item, then this purchase - need should be officially brought to the attention of the purchase department. The purchase department can be officially communicate about the need to purchase are particular item in two way
(i) By filling a Purchase Requisition form or
(ii) By B.O.M. (Bill of Materials)

(ii) Purchase Requisition Form

When user department are needs a item to be purchased then it should till a purchase Requisition Form. A purchase requisition form contains all the important and relevant information about the item to be purchased. A P.R.F. gives details about the dimensions, specification, quantity, and quality etc. of the material to be purchased. It may suggest names of potential suppliers. It is important for a company to specify a Standard format of P.R.F., it should also give details regarding who can authorize and countersign the P.R.Fs, so that irresponsible P.R.Fs are not generated A standard P.R.F. may be as follows:

**PURCHASE REQUISITION FORM**

|---------|---------------|----------------------------------|---------|----------|---------|

DATE: ______________
Sr. No.: ______________
Name of Department: ______________
Order No.: ______________
Date of Requirement: ______________
Present Stock: ______________
Annual Consumption: ______________

Please arrange to purchase the following:

Signature: ______________
Designation: ______________

For Purchase Department:-
Purchase order No.: - Date of Purchase end: -
Name of Supplier: - Delivery Date: -
Sign. Of Purchase Officer: -

Generally, when the stores department sends purchase requisition it is called routine P.R., A P.R. F. from a user department is first sent to the stores department and if the item is not in the stock, then only the P.R.F. is send to the purchase department for necessary action.

(II) Bill of Material
A "Bill of Material" gives the list of all the components, parts and sub-assemblies which are needed to produce one unit of the product. It also shows the sequence in which the product is created from these parts, components, sub-analyze etc. hence it is nothing but the product structure - tree of the product.

(III) SELECTION OF SUPPLIER

The purchase department can build a list of prospective suppliers through -

- Catalogues
- Trade Journals
- Trade directions’
- Trade shows and conventions
- salesman interview
- Experience
- Requests for quotations etc.

Sometimes the organization can directly contact the potential suppliers and in some particular situation they have to invite tenders from supplier. While Selecting or particular supplier from a list of potential suppliers, price of the item is not the only criteria, rather the other relevant factors.

i. Experience of the supplier
ii. Financial capability of the supplier.
iii. Knowledge shows research and development efforts
iv. Ethical behaviors
v. Ability to stick to the agreed terms and conditions of purchase
vi. After sales service and support.
vii. Quality of the item and delivery time should be according to purchase order.
viii. Price quoted by the supplier
ix. Quantity discounts offered by the supplier
x. Geographical location of the supplier.
xi. Reserve, std rage, warehouse and transportation facilities
xii. The technological progress of the supplier
xiii. The quality measures and quality consciousness of the supplier.

INVITING QUOTATIONS FROM SUPPLIERS

Different suctioning and Different methods of supplier selection are used for low-value and high value purchase in an organization, purchases of low-value are generally alone from local suppliers after ensuring that the price is seasonable. High value purchases are generally made by inviting tenders from potential/ suppliers.

There are different types of tenders

1. Single Tender: - In this type only one supplier is asked quote.
2. Restricted Tender: - A tender in which only a few firms are invited your quotations, is called restricted tenders. The firms to be invited may be selected on the basis of past performance good will.
3. Open Tender: - In this case, tenders are invited by placing advertisements in News paper, trade journals websites etc.

**ANALYSIS OF TENDERS**

**Making Comparative Statement**

After receiving sealed tenders from various suppliers up to the last date, the sealed tenders are opened on a specific date and time. The opened tenders are then checked for their validity. (Checked for completeness, signature etc). The particulars from these tenders are then presented in the form of a table called Comparative Statement. The comparative Statement helps in comparing all the tenders and selecting the Appropriate Supplier. The appropriate supplier can be chosen by considering factors like- Price time of delivery .Payment terms and conditions, good will, experience etc.

Format of comparative statement

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Mater / Item work</th>
<th>Name of Supplier</th>
<th>Quality</th>
<th>Rate per Unit</th>
<th>Delivery Date</th>
<th>_____ of delivery</th>
<th>Others</th>
</tr>
</thead>
</table>

**II) PLACING THE PURCHASE ORDER WITH THE SUPPLIER and ITS FOLLOW - UP**

After the negotiations with the prospective suppliers are over an appropriate supplier is finally chosen, the next step is to place a Purchase order to the chose apply. The format of Purchase order may be as follow.

**PURCHASE ORDER**

No. : __________________ Date: __________________
Ref. No.: __________________
To,
Name and Address of Supplier
Sub: Your Quotation for __________________ dated________
   This is to inform you that your Quotation No. ________________ for ________________
   dated_______________ was been accepted.
Now you are requested to supplier the following materials subject to terms and conditions mentioned herein.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item Code</th>
<th>Description / Specification</th>
<th>Quality</th>
<th>Rate</th>
<th>Value</th>
<th>Delivery Date</th>
<th>Remarks</th>
</tr>
</thead>
</table>

Purchase order may be made in 3 to 5 days. The Original copy of Purchase Order is sent to the supplier. Some time two copies may be sent, out of which one copy is returned by supplier after signing on it, indicating his acceptance of purchase order
One copy is sent to each user department Accounts, Dispatch, Purchase Department, stores department

*Follow up*

The purchase Department was the responsibility to ensure that the purchase orders are regularly followed up and ensure that the delivery of material is within stipulated time. Follow - up may be done
(IV) RECEIVING AND INSPECTING THE MATERIAL

The goods supplied by the supplier are received by the Receiving Department. The receiving department carries out following:

Prepares the Statement of Good received

This statement / slip / form contains data like:

- Verification of received quantity with the purchase order
- It records any discrepancy in damage condition of consignment, variation in material of goods etc.
- Information to the purchase department
- Information to the user department
- It may put an identification mark or identification number on the consignment so that it can be easily related to a particular purchase order No.
- If the materials are required to undergo any Quality Control or Inspection they come be sent to the Inspection department. Sometimes a Goods Inspection Report can also be made:

GOODS / MATERIAL INSPECTION REPORT

No. : ________________________________
Date : _________________ Supplier : _________________
Good Received No. : _________________
Purchase order No. : _________________

<table>
<thead>
<tr>
<th>Item Code</th>
<th>Description</th>
<th>Rejected</th>
<th>Remarks</th>
</tr>
</thead>
</table>

Inspection done by : ________________________ (NAME)

(V) CHECKING INVOICES AND MAKING PAYMENT

After the goods have been inspected and received the supplier's invoice is verified and checked for making his payment. The bill is passed for payment after ensuring the following points.

- The rate and quantity mentioned in purchase order should match with rate and quantity mentioned in the supplier invoice.
- The actual quantity received from the supplier should be verified with goods received note.
- The stock - entry and inspection certificate should be mentioned in the bill-body by the store’s manager.

The officer competent to sanction the expenditure should also sign on the bill - body sent to accounts department. If the invoice is checked and found correct in all manual then it is sent to accounts department for making the payment.

Treatment you Defective / Rejected / Shortage of goods from supplier

When the goods are found to be defective or not upto the standards / specification they are rejected. In such situation a debit note is sent to the supplier indicating the amount being debited into his account and also citing the reason you debiting it. A debit note is sent to supplier when the Material received is Less than the material required in the purchase order. A debit note may be of the following format:
DEBIT NOTE

Ref.: - Purchase Order No.
G.R.N.: - ______________
Supplier's Invoice No.: - ______________________

This is to inform you that we are debiting your account due to following reasons and materials:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item Code</th>
<th>Description / Specification</th>
<th>Quality</th>
<th>Value (Rs.)</th>
<th>Reason / Remarks</th>
</tr>
</thead>
</table>

Sign. : __________________

A credit note can be sent when the material supplied by the supplier is more than quantity required in the purchase order (and this additional quantity is actually accepted by the buying firm.)

In Treatment of discrepancies between two supplier's invoice and Purchase Order the supplier's invoice should be compared with the purchase order and Goods Received note. If there is any discrepancy should be brought to the notice of the seller and he is asked to make necessary convections.
Lesson-42

Stores Management

42.1. STORES MANAGEMENT

Stores, storage or stores management generally refers to the function of receiving, storing and issuing of material. It covers all aspects of preservation of goods i.e. stores-building, supplies and act of storing. It insures that materials are maintained in good condition, ready to use when required, and the records of incoming and outgoing materials is maintain

Benefits of good stores management

1. Materials are easily located and easily accessible.
2. Optimum space utilisation and flexibility in arrangement
3. Minimize unnecessary movement and hence reduced cost of material holding and transportation.
4. Minimization of deterioration and spoilage of material by proper monitoring.
5. Provides for ease of physical counting (physical verification)

42.2 Stores Location and Layout

In order to keep minimum material handling cost and easy accessibility, the following points should be kept in mind while deciding about the stores location and its layout

Stores Location:

Centralized vs. decentralized store.

It should be decided whether to have a centralized or decentralized store. Both have their own advantages as well as disadvantages in centralized stores the advantages are

1. Better supervision and better control
2. Gives benefit of bulk quantity such as price discounts and favourable delivery conditions.
3. Lower stock levels due to avoidance of duplication of stock

While in case of a decentralized stores system there is a greater flexibility and convenience in carrying out stores.

Stores Layout

The following points should be considered while designing the stores layout

- It should provide your easy supervision, cess and physical verification.
- Heavy and bulky materials should be placed such that they are near to its user department
- Availability of space should be used to its maximum extent
- All bins, racks, containers etc should be properly numbered/coded for easy identification
42.3. RESPONSIBILITIES AND FUNCTIONS OF A STOREKEEPER

Broadly the storekeeper is responsible for all functions carried out in the stores i.e. Receipt, storage and issue and record of material His main duties can be as listed below:

1. To receive materials, arrange for inspection, verify quality and quantity with purchase order, and accept the materials after complete verification of relevant documents.
2. Promptly prepare “stores received note “and circulate a copy to concerned departments.
3. To provide for adequate and proper storage facilities as per the requirement of various items.
4. ISSUE the correct materials in right quantity and quality to various user departments. Materials can be issued only if the material request note is duly authorized by competent personnel/officer
5. To keep updated records of all stores transactions such as material received, stored, issued, returned, transferred etc. Entries may be made in the bin card of each item.
6. To keep a track of inventory levels and place purchase requisitions when re-order levels of various items are reached.
7. To use proper codification and standardization methods.
   8. To try and minimize and report about various surplus stock, obsolete stock, on- moving items, abnormal consumption etc,
   9. To ensure good housekeeping of stores department and to restrict the entries of unauthorized persons.

Various records/documents used in stores department are

   a. Stores Received Note (SRN)
   b. Material Requisition Note (MRN)
   c. Material Transfer Note (MTN)
   d. Material Return Note

Stores Received Note:

It is prepared when materials are received from the supplier. Materials received are compared with the original purchase order which was placed to supplier.

Material Requisition Note:

It is sent by a user department which requires some materials from the stores department. It should indicate the name of user department, name and item code of material, specification, expected delivery period etc. And it should be authorized by a competent officer.

Materials Transfer Note:

It is prepared when the material is being transferred from one job to another OR from one department to another department.

Materials Returns Note:
Stores Records

Whenever material is received issued and transferred two sets of records are maintained.

(1) By store keeper: Store keeper keeps record for issued, received or transferred.

(2) By cost department: They keep record for value and quantity of material issued received and transfer.

The first one is called Bin card second is called Store’s Ledger. These two sets of records are compared time to time and adjustment is done.

1. Bin card: It is used to keep quantitative record in chronological order for all items and materials in the store by storekeeper. A Bin card is used for each material, every receipt, issue or return. It is hang up in a convenient place outside the bin and given a particular number. It is helpful to making entries as and when goods are placed, into bin or taken out. Numbering helps in identifying the bin.

2. Stores ledger: Stores ledger is kept and maintained by costing department in form of loose leaf card for ease of removing and inserting.

Stores ledger account may be designed without columns for "ordered""reserved" and stock verified. But they contain useful information which helps in future production without unnecessary reference of books and documents.

It provides continuous record of materials, stores received, issued, returned or transferred. It discloses the balance in hand both in quantity and value at point of time. It also helps in decision making.

Goods received note, material requisition, material return notes from basis of making entries in stores ledger account. Stores ledgers are same as bin card except that money values are shown only in stores ledger.

<table>
<thead>
<tr>
<th>Bin card</th>
<th>Stores ledger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It is maintained by store keeper in the store.</td>
<td>1. It is maintained by cost department.</td>
</tr>
<tr>
<td>2. Entries are made when transaction take place.</td>
<td>2. It is always posted after the transaction.</td>
</tr>
<tr>
<td>3. Each transaction is individually posted.</td>
<td>3. Transaction may be summarised and then posted.</td>
</tr>
<tr>
<td>4. It contains only quantitative details of material received, issued, and returned to store.</td>
<td>4. It contains information both in value and quantity.</td>
</tr>
<tr>
<td>5. Inter department transfer do not appear in bin card.</td>
<td>5. Material transfers from one job to another job are recorded for costing purpose.</td>
</tr>
</tbody>
</table>
43.1. INTRODUCTION

Due to the growth of industrial activity and diverse kind of industrial requirements, a large no. of organizations have to store a large number of items, often running into several thousands and even lacks. Therefore, there should be some means of identifying them. A common practice is to describe the items by individuals' names. Since several departments use the same item, they call the same item by different names and store them in different places. One of the most useful techniques of “Materials Management” is a rationalized codification system for properly classifying equipments, raw materials, components and spares to suit to the particular needs of any organization.

43.2. CODIFICATION

An article of stores is identified by its simple description or nomenclature. Difficulty arises when the same article is known by different names. For example, chipping goggles, grinder goggles, or white goggles are one item but may be stored separately under same nomenclature as different items. One storekeeper might classify an item as Sal Ammoniac, whereas a research chemist might identify it under the name of Ammonium Chloride, only to be told that it is not available.

The need for Codification arises because of the following reasons:

(i) Speed,
(ii) Unambiguity,
(iii) Saving of Effort,
(iv) Space Saving on forms,
(v) Ease of classification,
(vi) Mechanization.

Characteristics of Codes:

As far as possible uniform dimension say, the metric system should be adopted.

i) Code should be Simple.
ii) Code should be unique.
iii) Coding should be compact, concise and consistent.
iv) Code should be sufficiently flexible to meet future demands.

An ideal material code should:

i) Identify commodities
ii) Name commodities
iii) Specify commodities
iv) Classify commodities
v) Indicate inter-relationships between commodities
vi) Indicate the source of origin of commodities
vii) Refer specifically to an individual and unique commodity.

viii) Retrieval and Transaction
One of the prerequisites of classification and codification is to know the basic nature and characteristics of all materials used in an enterprise and then classify them in broad categories and then to group and sub-group them in logical progression of kinds, type and sizes etc. As for example, Raw materials, Semi-processed Materials, Mechanical (Products and equipment), Electrical (products and equipments), Chemicals (Allied products and chemical processing equipment), Laboratory and office (equipment and supplies) etc. can be classified, grouped and sub-grouped first.

Therefore, codification is a process of representing each item by a number, the digits of which indicate the group, the subgroup, the type and the dimension of item. The first two digits normally represent the major groups, such as raw tools, oil stationery, etc. The next two digits indicate the sub-groups, such as ferrous, non-ferrous, etc. Dimensional characteristics of length, width, head diameter usually constitute the further three digits and the last digit is reserved for minor variations.

Some of the systems of codification are:

**Arbitrary Systems**

Arbitrary system as the word ‘arbitrary’ indicates is based on the serial number under which a material is received and the same is allotted as a code number. Using this approach, all inventory items are simply assigned arbitrary numbers in sequence as they are added to the stores account. Each item thus has a discrete number, but it bears no systematic relationship to the numbers assigned to related items. Two similar items or two mating parts may have numbers several thousand digits apart. For example, if bolts are received and suppose a number 2521 has already been allotted to the previous item received, then the code number of these bearings will be 2522. This system has the advantage that there is no fixed limit for codifying any number of items. The main disadvantage is that one cannot know the characteristics or history of the items. This is the reason why the system is not popular.

**Mnemonic System**

A mnemonic system functions much like a numerical system. However, it combines numeric and alphabetic notations in its symbols. For example, the carriage-bolt described under the numerical system in the following manner:

\[
\text{P Fa BCS 503}
\]

P denotes a purchased part, Fa is a fastener, BCS stands for bolt, carriage, with a square neck, and 503 represent the specific number of the bolt. Mnemonic systems, particularly where a small number of items are involved, frequently make visual identification easier because they are more descriptive and they are often shorter. As more and different types of items are added to the inventory, however, this advantage diminishes because the numbers of good symbols are limited.

**Brisch System**

The Brisch system consists of seven digits applied in three stages. The items are grouped into suitable preliminary categories, such as assemblies, sub-assemblies, components and off the shelf items. After these preliminary categories, items are grouped within the respective class in order to
bring similar items together. The Brisch system through it consists only of seven digits, is quite comprehensive as the basis is on logical major groupings.

**Kodak System**
The Kodak system consists of 10 digits of numerical code. The logic of major grouping is based on sources of supply. All materials are divided into 100 basic classifications, contributed only by procurement considerations. For instance, a bolt is listed as hardware item if this is listed in hardware catalogues and available with hardware suppliers. If this bolt is available as a part of the machine, it will be available under maintenance.

### 43.4. STANDARDIZATION

Mass production techniques of industrial production are based on the principle of uniformity and interchange ability of many parts, components and material used in the production process. Standard products can be manufactured on a mass scale and their production cost can be kept minimum. Standardisation leads to cheaper and easier procurement and cost of replacement can also be reduced.

In our country Indian Standards Institution (ISI), now known as the Bureau of Indian Standards (BIS), is the national body which deals with standardisation at national level. There are various committees dealing with different industries who formulate national standards. BIS in collaboration with NTH (National Test House) and with the help of their control laboratories they issue the ISI certification mark, which is a third party and is accepted nationally as a proof of standard quality. Some of the international standards are British Standard (BS), American Standards Association (ASA) or the American Society for Testing Materials (ASTM). However, all the industrially advanced countries in the world have their own national standards. International Standards Organization (ISO) with its HQ at Geneva, issues international specifications. India being a member of ISO is a general acceptance as to be desirability of standardization, there is no possibility of complete standardization.

The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations. Codex texts are voluntary and non-binding. In international trade disputes, Codex standards and guidelines may be cited as reference texts at the World Trade Organisation (WTO). By introducing legislation and regulation that is consistent with Codex standards and guidelines governments may reduce the risk of being brought before a WTO Disputes Panel. A Government can adopt its own level of protection, e.g. go beyond or stop short of Codex. If a government chooses a higher level of protection, and in the event of a trade dispute, it may be required to justify the sanitary measure corresponding to its chosen level of protection on scientific, health, or other legitimate grounds. In many countries, most food legislation is already consistent with Codex.
In the field of stores and material management, standardisation enables industry to proceed on scientific lines to locate factors influencing preparation of inventory control programmes, for achieving economy of materials and parts, avoiding wastages, disposal of unwanted stores and reduction in stock. Again through standardisation and variety reduction, rationalized codification becomes easier. The role of standardisation and variety reduction in inventory simplification has therefore real significance in industrial materials management field.
Lesson-44
Introduction to cost accounting

44.1. INTRODUCTION
The main goal of an organization is to maximize profit (or functioning in the most efficient manner). To maximize profit, the firm must try to increase its revenues, and at the same time it should control costs. The firm would be much more satisfied when they are actually able to "reduce" their costs. Hence for maximizing the profit and increasing efficiency of a firm, the planning, controlling & reduction of costs is very important.
The effective management of costs can be done only by a systematic approach toward cost.

44.2. COST
As the entire discussion centers around the term "cost", it is necessary to understand what "cost" means."Cost may be defined as the resources sacrificed or foregone in order to achieve a specific objective."The use of the term " cost ", without a suffix or prefix is also not recommended, for example Direct cost, Indirect cost, Historic cost, Future cost, Additional cost, opportunity cost etc.

44.3. COST ACCOUNTING
Cost accounting is primarily concerned with Recording, classifying and summarizing cost for:-
(a) Determination of costs of products or services
(b) Planning, controlling & reducing such cost and furnishing of information to management for decision making.

Objectives of Cost Accounting
The main objectives of cost accounting are –
(1) Determining Selling Price:-
   As organizations run for profit making, they want their revenues to be greater than costs of goods & services. The cost of manufacturing / producing goods / services gives a base for fixing the selling price of the goods / services.
   Several other factors such as demand supply gap, cost of distribution, condition of market etc also play an important role in determining the selling price, but still "Cost" plays the dominating role.
(2) Determining & Controlling Efficiency :-
   Cost accounting involves the study of the underlying operations used in production of a good / service, hence it facilities the measuring of the efficiency of the department or organization as a whole.
   Cost accounting also involves preparation of the "Budgeted cost"
(3) Facilitates the preparation of Financial & other Statement.
   The third objective of cost accounting is to facilitate & prepare various statements & reports at very short intervals, which are externally useful to the management for efficient running of the business and prompt decision making.
Such statements/reports include frequent review of sales, production, operating costs, daily/weekly/monthly data of units produced, accumulated costs, etc along with their appropriate analysis.

A well developed cost accounting system can provide these statements/reports quickly and without any delay. Hence, it can also facilitate preparation of half-yearly or yearly financial statement.

(4) Provide basis for Operating Policy

A cost accounting involves recording and analyzing various costs, it can give important inputs for taking decisions under particular situation, such as

- Making or buying from outside suppliers?
- Own productions or outsourcing?
- Determination of cost-volume-profit relationship, and hence determining the breakeven point, Margin of safety etc.
- Continuing with old machinery/equipment or to replace it.

**Cost Accounting Vs Financial Accounting:**

It should be emphasized here that financial accounting primarily aims at external reporting to shareholders, lenders, Banks & financial institutions, investors, Government authorities etc and other stakeholders. It is mandatory and prepared as per legal & other requirements.

Cost accounting focuses on cost of product, services etc. It is primarily aimed at internal reporting and the cost accounting reports are provided to managers for effective decision making.

**44.4. METHODS OF COSTING & TYPES OF COSTING:**

**Methods of costing:**

Various methods of ascertaining costs are available to suit the business need. But the basic principles are the same in every method. The choice of a particular costing method thus depends on the nature of the business of the concern.

There are two basic methods of costing –

1. specific order or joint costing
2. continuous operation or process costing

All the other methods are either the variation of job or process costing or are just techniques used for a particular purpose under specific conditions. A brief description of each of the methods is as follows:

**Job costing**

Job costing is the basic costing method applicable to those industries where the work consists of separate contracts, jobs or batches, each of which is authorized by a specific order or contract. The most important feature here is that each job or order can be identified at each stage of production and therefore, costs that can be directly identified with a job or order is charged to that job or order. A share of indirect expenses is also charged to the same. Variations of job costing are contracts costing and batch costing.
**Contract costing**

It is the form of specific order costing, generally applicable where work is undertaken to customer’s special requirements and each order is of long duration, such as building construction, ship building, structures for bridges, civil construction, etc. The work is usually done outside the factory.

**Batch costing**

It is that form of specific order costing which applies where similar articles are manufactured in batches either for sale or for use within the undertaking. Costs are collected according to the batch order number and total costs are divided by the total numbers in the batch to arrive at unit cost of each job. The method is applicable to aircraft, toy making, printing industries, etc.

**Operation costing – process and services**

Process costing method is applicable where goods or services result from a sequence of continuous or repetitive operations or processes and products and products are identical and cannot be segregated. Costs are charged to processes and averaged over the units produced during that period. Like job costing, here also there is no need for maintaining detailed records for each job because the total production consists of identical units. It must be noted that here, the units that are completed during the year are considered. However, this may arise from the following three situations:

1. Uncompleted units of the prior period completed during the current period (shown as work in progress in the beginning)
2. Units started and completed during the current period
3. Units started during the current period but remain uncompleted at the end of the current period, which is shown as work in progress at the end of the year

The work in progress inventory is converted into equivalent complete units based on the stage of completion of their processing.

It should be noted that if the units are lost or spoilt during the processing in any department, such loss is borne by the units complete and remained uncompleted in that department. Thus, the cost of lost units is spread over the remaining units on some equitable basis.

The ascertainment of various costs basically comprises three categories:

a. direct material cost
b. direct labor cost
c. overheads

Examples are food processing, chemicals, dairies, paints, flour, biscuits, etc. Variations of process costing are found in single or output costing, operation costing, departmental costing, as explained below:
**Single or output costing**

It is used when the production is uniform and identical and a single article is produced. The total production cost is then divided by the number of units produced to get unit or output cost. Examples are mining, breweries, brick making, etc.

**Operation costing**

It refers to the methods where each operation in each stage of production or process is separately coasted. Thereafter, the cost of finished unit is determined. This is suitable in industries dealing with mass production of repetitive nature like motor cars, cycles, toys, etc.

**Departmental costing**

It refers to the method of ascertaining the cost of operating a department or cost centre. Total cost of each department is ascertained and divided by the total units produced in that department to arrive at the unit cost. If one product passes through a number of departments for completion, the cost of each department will be picked up and the total unit cost will be aggregate of the unit cost of the department through which the product passes.

**Service or operating costing**

Operating cost is applicable to service organization that do not makes or sell tangible goods but render services. Examples are transportation companies, hotels, hospitals, schools, electric and gas generation and distribution, etc. Cost of providing and operating a service is ascertained and unit cost is found out by dividing the total cost of units of services rendered. Composite units such as tone-mile, passenger-kilometer, KWH, etc are generally used.

**Composite or multiple costing**:

The manufacture of certain products involves a lot of complexities and therefore, any of the basic methods of job or process costing cannot be used for collecting and presenting product cost. In fact, industries making complex products such as cycles, automobiles, airplanes, radios, etc use a combination of various costing methods and the methods are known as composite or multiple costing.

**Techniques of costing**

In each of the costing methods, various techniques may be used to ascertain costs depending on the management requirement. These techniques may be grouped as follows:

**Absorption costing**

It refers to the ascertainment of costs after they have been actually incurred. As per this system, fixed as well as variable costs are allotted to cost units and total overheads are absorbed by actual activity levels. Absorption costing is termed as total costing, since total costs are ultimately
allocted to cost units. It is also termed as traditional or historic costing. However, since costs are ascertained after they have been incurred, and substantial time gap exists between the occurrence of the expenditure and reporting of the cost information, it does not help in exercising cost control.

**Marginal costing**

It refers to a principle whereby variable costs are charged to cost units and the fixed costs attributable to the relevant period is written off in full against the contribution for that period. Contribution is the difference between sales and variable or marginal costs of sales. Marginal costing is also known as direct or variable costing. It is a valuable aid to management in taking important policy decisions, such as product pricing, choosing the product mix, decisions to make or to buy, etc.

**Standard costing**

It refers to the technique which uses standards for costs and revenues for the purpose of control through variance analysis. Standards are established for each cost element on a scientific basis for the immediate future period, and actual are compared against the standards. Variances from the standards are analyzed, reasons established and corrective action taken to stop the recurrence of inefficient operation. Thus, standard costing is extremely helpful for cost control.

Standard costing is normally used along with budgetary control, which refers to the establishment of budgets relating to responsibilities of executive to the requirements of a policy and the continuous comparison of actual with the budgeted results, either to secure by individual action the objective of that policy or to provide a basis for its revision.

Absorption costing system and marginal or direct costing system can be used in conjunction with standard costing system.

**Differential costing**

It is defined as a technique used in the preparation of ad hoc information in which only costs and income differences between alternative courses of action are taken into consideration. It considers only the additional costs and additional revenues arising out of the decision regarding addition of a project. Similarly, incremental costing technique considers incremental costs and incremental revenue arising out of a decision to change the level of nature of activity.

**Uniform costing**

It refers to the use by several undertakings of the same costing system, that is, the same basic methods, principles and techniques. This is not a distinct method of costing. This system is applied by a number of units of the same undertaking or several undertakings within the same industry with a view to promote operating efficiency by comparing inter – unit or inter – firm performance data. Trade associations and multinational companies often use this system.
Lesson-45
Classification of costs

45.1. CONCEPT OF COST AND CLASSIFICATION OF COSTS:

Cost Centre:
A Cost-centre is defined as a location, person or item of equipment (or the group of these), for which
costs may be ascertained and used for the purpose of cost control.

Cost centre are primarily of two types.
(i) Impersonal cost centre
(ii) Personal cost centre

Impersonal cost centre consist of location, Equipment or group of machines, for which costs may be
ascertained. Whereas Personal cost centers refer to person (or group) eg – Factory Manager, Sales
Manager, Purchase Manager etc.

From Functional point of view, a cost center may be classified as:
(i) Production cost centre
(ii) Service cost centre

Production cost centre are those cost centers which are primarily engaged in production activities. (e.g. production, packing, processing, etc)

Service cost centers do not involve production but are essential and supportive for production and
existence of business. E.g. Administration, Canteen, Transportation, repairs and maintenance, etc

Other type of cost centers are:
(i) Operation cost centre.
(ii) Process cost centre

Operation cost centre is one in which a group of machines (or person) perform the same operation.
When a cost centre is such that it contains a specific process or a continuous sequence of operations,
it is called a process cost centre.

Identification of cost centers is very important because it provides a base
(person/equipment/department etc) for which costs may be ascertained, controlled and reduced.

Cost Unit:
The institute of cost and management accountants, England defines a cost unit as follows:"A unit of
quality of product, services of time (or a combination of these) in relation to which costs may be
ascertained or expressed "It may also be defined as the "Unit of quantity of output in relation to which
costs are ascertained or expressed".

For example

<table>
<thead>
<tr>
<th>Industry</th>
<th>cost Units are</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Brick Industry</td>
<td>Per 1000 bricks</td>
</tr>
<tr>
<td>2 Electricity generating co.</td>
<td>per unit of electricity generate</td>
</tr>
<tr>
<td>3 Steel industry</td>
<td>per tonne of steel</td>
</tr>
<tr>
<td>4 Paper industry</td>
<td>Reams</td>
</tr>
</tbody>
</table>
### 45.2. CLASSIFICATION OF COSTS:

It is always recommended that the word "cost" should be used with adjective or phrase for its proper meaning. Cost classification is defined as the process of grouping costs according to their common characteristics. Costs can be classified on several basis such as time of ascertaining the costs, degree of traceability, on the basis of function, on the basis of nature of expenses etc. The most commonly used classification of costs is as under:

1. On the basis of behavior of cost w.r.t. changes in output, or volume – The cost can be classified into
   - Fixed Cost
   - Variable Cost
   - Semi-variable cost (or Mixed Cost)

**Fixed Cost**

Those costs which do not vary with the amount of units produced remain constant for a given period of time. Hence fixed cost has no relation with the level of output. Examples are-e.g. Rent, Insurance, Property taxes, Depreciation office facilities, executive’s salary etc.

**Variable Cost**

Those costs which proportionately vary with the level of output is variable cost. For example: cost of raw material components etc. If one unit of a product requires material worth Rs. 20, then 100 Unit would require material worth 20 x 100 Rs. 2000, hence the cost of material here is variable cost and increases or decreases with the level of output. It should be further noted that, when there is no production, there is no variable cost.

**Semi-variable (Mixed Cost)**

The costs which are not fully constant and not fully variable with the amount of production (level of output) are called semi variable costs. Semi variable costs consist of two components – Fixed and Variable.

**Example:**

(a) If a worker is paid on the basic of output for eg. Rs.100 per unit. Then for making 20 units in month, he will get payment of Rs. 2000.
   This cost in variable cost.

(b) If the same worker was hired at a monthly salary of Rs. 1500/- then, irrespective of the output, he will receive of the output, he will receive Rs. 1500 at month
   This cost is Fixed cost.

(c) If the payment to the worker was structured in following manner
   The worker gets fixed salary of Rs. 100 per month and incentive Rs. 50 per unit.
   If the worker produces 8 unit in a month his earning at the end of more are
1000
400
1400

Similarly, calculation are made for, different level of output

<table>
<thead>
<tr>
<th>Output of worker</th>
<th>8 units</th>
<th>10 units</th>
<th>16 units</th>
<th>20 units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Rs.</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Variable</td>
<td>8*50 = 400</td>
<td>10 * 50 = 500</td>
<td>800</td>
<td>1000</td>
</tr>
<tr>
<td>Total</td>
<td>1400</td>
<td>1500</td>
<td>1800</td>
<td>2000</td>
</tr>
</tbody>
</table>

It can be interpreted that, the earnings of the workers is variable unable the output but it is not directly proportionate to the output.

**NOTE ON FIXED COSTS:-**

It is to noted that fixed costs are "Fixed" for the "given period" under consideration, for example "Rent", it is fixed for the given period and does not depend upon the output. For example, a ice-cream vendor takes a shop rent for one month in a fair, then the cost of rent, is fixed for the month, it has no relation with the amount of ice – cream sold. Even if no ice – cream is purchase or sold, the amount of rent remains same. Hence fixed cost is always expressed in terms of “time” such as per day, per month, per annum. Sometimes, fixed costs can be further classified into

- Committed fixed cost and
- Discretionary fixed costs

**Committed Fixed Costs:-**

Fixed costs which are incurred primarily to maintain the company's facilities (plant, equipment and basis organizations structure) and its physical existence are called committed fixed costs. Hence, it is clear that commuted fixed cost arise because of decisions of possession of plant, building, equipment etc. Once the building is constructed, plant and equipment are installed the company has to been certain fixed costs – Depreciation, taxes, insurance, rent etc. The management has little or no control over there costs, they can not reduce / change there costs without impairing the organization's ability to achieve its long term objectives.

**Discretionary Fixed Costs:-**

Discretionary costs are also called "programmed cost / policy costs ". These are the costs which are a result of special policy decision. These decisions are taken by the top management. The basic feature of discretionary fixed cost is that it has no particular relationship with the volume of output. Examples- R and D costs, marketing programs, donations, sales promotion costs etc.

In case of committed fixed cost, there is negligible control of the management the Discretionary fixed costs, are greatly controllable by the management. Discretionary fixed costs can be reduced or even eliminated entirely if the circumstances so require.

**45.3. DIRECT COST AND INDIRECT COSTS**

1. Direct cost:
The costs which can be easily traceable identifiable (and fully chargeable) to a given product are called direct cost e.g. direct material, direct labour etc.

2. Indirect Costs:
The costs which can not be wholly and usefully associated or traced or identified with a given product are called indirect cost. Indirect costs are costs which are not incurred for a single product only rather they are incurred for several products. Hence these costs can not be charged fully to any one product in particular.

Hence, indirect costs are charged on the basis of some proportion to each product.

Ex. – Salary of supervisor, Depreciation, Rents, Taxes, lubricants and salary of store keepers, foreman etc. for e.g. a supervisor who look after production of 5 different products, his salary can not be charged to one product (rather charged proportionately to all 5 products).

Direct or Indirect cost
The fact that whether a cost is "direct or indirect" depends upon the cost centre / cost object whose cost we want to ascertain. If a company dealing in diversified product has sales department, which consist of 20 sales manager looking after automobile division, electrical appliance division etc, the salary of sales managers looking after automobile division is an indirect cost to the scooter because if can not be fully charged to scooter only. If we wish to ascertain to cost – department will – i.e. cost of sales department cost of purchase depend cost of customer service dept. etc. then the salary of the sales manager is a Direct Cost to the sales department.

Hence, the problem of direct and indirect, depends upon the associate or identifiability of the cost with the given cost centre. For example, the salary of sales manager can be fully identified with sales department (and not with any other Department) it is a direct cost to the department. (But the salary of general manager who controls all departments can not be fully associated with only one department and hence if is an indirect cost to each department.

Product Cost and Period Cost
Certain costs (like material, labour, expenses and indirect manufacturing overheads) which become the part of cost of the product are called product costs. That is it includes all the costs involved in manufacturing the final product. A typical feature of "product cost" is that if the product is not sold, then it continues to be shown as inventory (at product costs) in the balance sheet, hence these cost (product costs) are not charged as expenses in the current year's income – expenditure statement. (They are called inventoriable costs, and hence carried forward to next period). Subsequently the year / period in which the product is finally sold in that year the product cost are charged in the P and L account as cost of goods sold. So product cost can be carried forward to future account period.

Period Cost:
Certain costs like Depreciate of office premises, selling and Distribute expenses – etc which are not a part of product costs, are called period – costs, the “Period costs” are charged as an expense in the same period in which they are incurred. They are not being carried forward to next accounting period.

On the basis of a cost's relationship with the accounting period – costs may be divided into

1. Capital Expenditure
2. Revenue Expenditure
a. Revenue Expenditure – The cost whose entire benefit will be received in the current year (current accounting period), is classified as Revenue Expenditure. Revenue Expenditure is treated as Expense and charged fully in the current year itself. (E.g. rent, lubricant, Raw materials etc.)

b. Capital Expenditure – In the situation, where a cost is incurred (such as for long – term equipment, Building, license, etc), such that it provides benefit for more than one accounting period (accounting year) (i.e. future accounting period). Then, it is classified as Capital expenditure. (Clearly, as the entire benefit of a capital expenditure can not be received in the current accounting can not be treated as an expense of the current period only : Rather, the capital expenditure is charged suitably in the future accounting period also) e.g. Amortization, depreciation etc. The capital expenditure is shown as an asset in the balance sheet.

45.4. COSTS USED IN DECISION MAKING

(A) Opportunity Cost:

It is the cost of rejecting the "second best alternative" and selecting one alternative. For ex. out of a several choices available, we can make a choice of one alternative, but by doing so we reject all other alternatives, and also reject the benefits of other alternatives. So it implies that, we are selecting on a particular alternative, at the cost of rejecting other alternatives. Opportunity cost represents, the cost (Benefits costs) associated with the rejecting of second best alternative.

a. For ex. if a doctor works in hospital and earns salary of Rs. 30,000 p.m. decides to start his own clinic, then he loses the opportunity to earn Rs. 30,000 p. m. Hence, he has an opportunity cost of Rs. 30,000 p.m.

b. Inventory:- If a person / firm decides to invest Rs. 5 lakhs in inventories. The other option was to invest Rs. 5 lakhs in bank. But by selecting to posses inventory worth Rs. 5 lakhs, the firm has to fore go, the interest which can be earned on Rs. 5 lakhs (by keeping it in bank).

c. Hence, the opportunity cost of keeping inventories, is the amount of interest lost on the capital blocked in inventory.

(B) Relevant Cost and Irrelevant Costs:

Relevant costs are those costs, which are affected by selecting different managerial decision – Hence they are affected by managerial decision. On the contrary, irrelevant costs are those costs, which remain the same, do not change, and are unaffected whatever decision (alternative) has been taken. These are unaffected by any managerial decision. Irrelevant costs are historic and unavailable any future decision, taken by management can not alter the irrelevant costs. Hence, irrelevant costs should be ignored in decision making (since, they are not going to be affected by any decision and remain same for all decisions alternative). Relevant costs are always "future costs", they may increase / decrease / or totally avoided by a particular managerial decision.

(C) Sunk Cost:

Sunk costs are historical or past costs. (e.g. land, building, equipments, etc). These costs have been incurred by a decision in the past, no future decision can alter these costs. Hence they are historical and an avoidable costs and are irrelevant, they should be ignored for decision making.
(D) Differential Cost and Marginal Costs:-
Marginal Cost: -It is cost of producing one more (additional unit). (so, it can calculated from finding the
(a) total cost of n units, (total cost of (n+1) unit, and then calculating b-a = m. c)
Differential costs: It is difference between total costs associated with the different alternatives.
Differential costs may be further classified into
   1. Incremental costs
   2. Decremental costs
While selecting alternative a instead of alternative b, if the net result is increase in cost, then the
differential cost is called incremental cost and if the net result is "decrease" in cost, then the
differential cost is termed as "decremental cost".

(H) Joint Costs and Common Costs:-
a. Joint cost:
Many times, out of the same manufacturing operations (or from the raw material), two or more
products are produced. The cost incurred till the split – off point of these products called the joint –
cost.
The National Association of Accountants define joint costs as, "Joint Costs relates to two or more
products produced from a common production process or element – material labour or overhead or
any combination of these or so locked together that one can not be produced without producing the
other(s). For e.g. while refining crude, oil – kerosene, fuel oil, gasoline, was etc are produced. The
total cost incurred up to the point of separation is called joint cost.

Common Cost:
Common costs are the costs which are incurred for more than one product, job, territory or any other
specific costing object. Common costs are common to two or three products and they are apportioned
among the products on some suitable basis. For example the sales manager who looks after three
different products, his salary is common to three products and apportioned among them. The basic
different between Joint Cost and common costs is that – "Joint costs are incurred only in Process
Industries where a product can not be independently produced". Common cost is not the result of any
manufacturing compulsion.

Conversion Costs
The cost of converting raw material into finished goods is called conversion cost. It excludes the cost
of direct materials. It includes cost of direct labour, direct expenses and factory overheads (Hence, it is
also referred as "production cost – excluding the cost of direct materials").

COST ESTIMATION and COST ASCERTAINMENT
COST ESTIMATION:
It is the process of estimation (predetermination the cost of certain – product, job, activity, etc.)Such
cost – estimation is useful for planning, budgeting, measuring of performance efficiency, fixation of
selling of products, etc. Hence, it represents the computation of future costs.

COST ASCERTAINMENT
On the basis of the data of actual costs which have been incurred, the process of determining the cost
of product, process, job, etc is called cost ascertaining. Hence, cost ascertainment is essentially the
computation of historical costs.

**COST ALLOCATION AND COST APPORTIONMENT:**
Cost allocation refers to the process of "allotment of whole items of cost to cost centre on cost unit." whereas cost apportionment refers to the "allotment of proportions of items of cost to various cost centre / cost unit." Hence cost allocation is a process of charging direct costs, whereas cost apportionment is process of charging indirect costs to various cost centers.

**COST REDUCTION AND COST CONTROL**

**COST CONTROL:**
It refers to controlling costs at the pre – established standards (cost targets). So, the main aim of cost control is to control costs and ensure that costs do not exceed the targets.

**COST REDUCTION:**
It refers to try and reduce the cost – target itself. Hence, it means continuously exploring various possibilities of reducing the cost targets. It can be done even in a situation where efficient cost – control is in existence.
Lesson-46

Main elements of costs

46.1. ELEMENTS OF COST

There are three main elements of cost

1. Material
2. Labour
3. Expenses

(1) Material Cost:

It is the cost of material which is used for the production of the product. It can be Raw material, component assembly, oils, lubricant, stationary printing, packaging etc.

The material can be of two types

a. Direct Material
b. Indirect Material

Direct Material

The material (such as raw material, components etc) which can be directly identified and associated with a given product are called direct material. The direct material cost is wholly charged to the cost of the product.

Indirect Material

The materials, which do not form a part & parcel of the final product, but are necessary for running for production process & business (oil, lubricants, brooms, spares, stationary, printing materials, etc) are called indirect material. Indirect materials, are used for general purpose, and hence they can not be identified with a single product in particular. Hence, the indirect material, cost in apportioned to all product on some suitable basis Other exe – selling & promotion materials, material used in the administration department etc.

2. Labour:

For conversion of raw material into finished goods & for operations of the business, various kinds of human efforts one required, these are called labour. Labour can be Direct & Indirect. The labour (e.g. Worker, Supervisor, Machinery operator etc) which is identifiable and fully associated with the production of a given product, is a direct labour cost for that product. Indirect Labour:-The labour which with a particular product / cost center is called indirect labour. e.g.: Production Manager (who looks after more than one Product), Salary & Storekeeper, salary of gate keeper, salary of administrative Staff, salary of management etc salary of salesman, etc.

3. Expenses:

The costs which cannot be classified under material & labour are called expenses. Expenses are direct & indirect. Direct expenses are those expenses which can be community & wholly identified to specific product (or specific cost center) Examples: - Hire & some special equipment for production of
a particular product. The rent of equipment can be fully charged to that product only (and no other product) and hence is a direct expense.

Indirect Expenses: - Are those expenses such as – Rent, insurance, lighting, etc, which can not be wholly identified & attributed to any single product or cost centre.

46.2. OVERHEADS

All the indirect costs (Indirect material, Indirect labor, indirect expenses) are collectively called as overheads. Hence it is nothing but the aggregation of all Indirect costs.

Further overheads are classified into:

1. Factory overheads [Indirect material, Indirect labor, indirect expenses in the factory]

2. Office & Administration overheads [Indirect material, indirect labor, indirect expenses used in the Office & Administration.]

3. Selling & distribution overheads [Indirect material, Indirect labor, indirect expenses used in the Selling & distribution.]

*Factory overheads:*

It includes; indirect material used in the factory such as lubricants, oils, consumables stores, threads, dusters, sanitizing substances used in the factory. Indirect labor used in the factory: Gate keeper’s salary, storekeeper’s salary, work manager’s salary, general helpers, cleaners, etc. Indirect expenses used in the factory: factory rent, factory insurance, factory lighting, etc.

*Office & Administration overheads:*

It includes; Indirect material used in the Office & Administration : Printing, stationery, office furniture, brooms, etc. Indirect labor used in the Office & Administration: Salaries, payable to office managers, accountants, etc. Indirect expenses used in the Office & Administration : Rent, insurance & lightings, taxes of office building.

*Selling & distribution overheads:*

It includes; Indirect material used in the Selling & distribution overheads: Packaging, printing material, exhibition boards, bulletins, etc. Indirect labor used in the Selling & distribution overheads: Salary of sales manager, salesmen, etc. Indirect expenses used in the Selling & distribution overheads: Rent, advertising, sales & promotion activity, etc.

So, overheads

*Table-46.1: Examples of overheads*

<table>
<thead>
<tr>
<th>FACTORY</th>
<th>Office &amp;</th>
<th>Selling &amp; distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Table-46.1: Performa of cost sheet

<table>
<thead>
<tr>
<th>Sr.no</th>
<th>Particulars</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Opening raw material</td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>Purchase</td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>Closing raw material</td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>Raw material consumed (A+B-C)</td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>Direct labour cost</td>
<td></td>
</tr>
<tr>
<td>F.</td>
<td>Direct expenses</td>
<td></td>
</tr>
<tr>
<td>G.</td>
<td>Prime cost(D+E+F)</td>
<td></td>
</tr>
<tr>
<td>H.</td>
<td>Factory overheads</td>
<td></td>
</tr>
<tr>
<td>I.</td>
<td>Opening work in process</td>
<td></td>
</tr>
<tr>
<td>J.</td>
<td>Closing work in process</td>
<td></td>
</tr>
<tr>
<td>K.</td>
<td>Factory cost(G+H+I-J)</td>
<td></td>
</tr>
<tr>
<td>L.</td>
<td>Office overheads</td>
<td></td>
</tr>
<tr>
<td>M.</td>
<td>Opening finished goods</td>
<td></td>
</tr>
<tr>
<td>N.</td>
<td>Closing finished goods</td>
<td></td>
</tr>
<tr>
<td>O.</td>
<td>Cost of production and goods sold(K+L+M-M)</td>
<td></td>
</tr>
<tr>
<td>P.</td>
<td>Selling and distribution cost</td>
<td></td>
</tr>
<tr>
<td>Q.</td>
<td>Cost of sales /Total cost(O+P)</td>
<td></td>
</tr>
<tr>
<td>R.</td>
<td>Profit(S-Q)</td>
<td></td>
</tr>
<tr>
<td>S.</td>
<td>Sales revenue</td>
<td></td>
</tr>
</tbody>
</table>

**Illustration:**

*From the following data prepare a cost sheet. (Amount is in Rs.)*

- Factory Overheads 46000
- Opening Raw material 15000
- Add: opening Work in Process 6000
- Opening Finished goods stock 30000
- Selling & Distribution Overheads 10000
## COST SHEET

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Opening Raw material</td>
<td>15000</td>
</tr>
<tr>
<td>B Add: Purchases of raw material</td>
<td>225000</td>
</tr>
<tr>
<td>C Less: Closing stock of Raw materials</td>
<td>7500</td>
</tr>
<tr>
<td>D RAW MATERIAL CONSUMED</td>
<td>232500</td>
</tr>
<tr>
<td>E Add: Direct Labour</td>
<td>115000</td>
</tr>
<tr>
<td>F Add: Direct Expenses</td>
<td>0</td>
</tr>
<tr>
<td>G PRIME COST</td>
<td>347500</td>
</tr>
<tr>
<td>H Add: Factory Overheads</td>
<td>46000</td>
</tr>
<tr>
<td>I Add: opening Work in Process</td>
<td>6000</td>
</tr>
<tr>
<td>J less: closing Work in Process</td>
<td>0</td>
</tr>
<tr>
<td>K FACTORY COST</td>
<td>399500</td>
</tr>
<tr>
<td>L Add: Office overheads</td>
<td>15000</td>
</tr>
<tr>
<td>M Add: opening Finished goods stock</td>
<td>30000</td>
</tr>
<tr>
<td>N Less: closing Finished goods stock</td>
<td>27500</td>
</tr>
<tr>
<td>O COST OF PRODUCTION</td>
<td>417000</td>
</tr>
<tr>
<td>P Add: Selling &amp; Distribution Overheads</td>
<td>10000</td>
</tr>
<tr>
<td>Q TOTAL COST</td>
<td>427000</td>
</tr>
</tbody>
</table>
Lesson-47
Valuation of inventory

47.1. VALUATION OF INVENTORY

The method of inventory valuation is of great importance to management for the following reasons. It determines the amount of firm’s investment in inventory, i.e., how much money has been blocked and influences the amount of firm’s reported income, i.e., profit. Cost accounting (records) rules provide that ‘inventory’ should be valued at cost of production.

47.2. VALUATION OF MATERIALS

Cost accounting records rules provide that raw material, stores and spare parts would always be valued at cost while in financial accounts it is valued at lower of the cost or market price. The term ‘value’ includes net invoice price (after deduction of trade discount and allowances) plus all direct charges such as freight, duty, cleaning charges, carriage etc. As may have been incurred before the materials reach the factory.

47.3. METHODS OF PRICING ISSUES

1. First-in First-out Method:

The FIFO assumes that items first received are the first to be issued and that the requisitions are priced at the cost at which these items were placed in stock. It should be emphasised, that the pattern of cost flow does not necessarily coincide with the actual flow pattern of the materials. FIFO method does not mean that oldest materials are necessarily used first. It simply means that the oldest costs used for accounting purpose first regardless of actual material flow.

Advantages

1. This method is not based on approximations and estimates.
2. It conforms to sound principles of economics and business.
3. It is a convenient method to be used for pricing of material issues under any circumstances.
4. It is based upon a clear-cut assumption as to the movement of goods in storeroom.

Disadvantages

1. This method involves a lot of calculation work.
2. For pricing one requisition, more than one price may have to be adopted.
3. Cost may be distorted, if the prices of different lots of materials are used for pricing issues to different batches of production.
4. In a period of fluctuating prices, the costs of issues do not represent market price.

2. Last-in-First-out Method:
The LIFO method of costing is based on the assumption that the last items purchased are the first to be used. It should be emphasised that the pattern of cost flow does not necessarily coincide with the actual flow pattern of materials.

**Advantages**

1. The cost of material is started more nearly at current market price and, thus, unrealised inventory profits are not reflected in the accounts.
2. It conforms to the principle that cost should be related to current price levels.
3. Unlike FIFO method, this method does not result into unrealised profit due to inflationary trends.

**Disadvantages**

1. This method is considerable clerical work.
2. The balance at hand is valued at the oldest prices which may not correspond at all with prevailing market price.
3. Under falling prices, issues are price at lower prices and stocks are valued at higher rates.
4. Sometimes more than one price has to be adopted for pricing a requisition.
5. This method is not acceptable to income tax authority.
6. This method is suitable when items of material to be priced are few in number.

### 3. Weighted Average Method:

Under this method, the quality of material purchased during a particular period is also taken into account. This method is also used for a particular period. The weighted average price is calculated by dividing the total cost of the material purchased during the accounting period. In which the material to be priced is used, by the total quantity of material purchased during that period.

**Weighted Average Price =** 

\[
\frac{\text{Total cost of purchases during the accounting period}}{\text{Total quantity purchased during accounting period}}
\]

This method takes into account both the cost and the quantity of the material purchased during the accounting period.

**Advantages:**

1. It is simple to operate.
2. It averages out the effect of price fluctuations.
3. It can be advantageously used in process industry.

**Disadvantages:**
1. This method cannot be used in job order industry, where each individual order must priced at each stage up to completion.

2. The costing of material issued gets delayed up to the end of the period and this result in heavy burden on clerical staff in the end.

3. Under this method also the closing stock will not correspond to the conventional accounting of valuation of stock, that is, cost or market price whichever is lower.

Example:

Prepare a store’s ledger account if the material are issued on FIFO and LIFO bases and find closing inventory

<table>
<thead>
<tr>
<th>Date</th>
<th>Issued Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/3/10</td>
<td>50</td>
</tr>
<tr>
<td>10/3/10</td>
<td>25</td>
</tr>
<tr>
<td>20/3/10</td>
<td>125</td>
</tr>
<tr>
<td>31/3/10</td>
<td>50</td>
</tr>
</tbody>
</table>

Solution :

Solution according to First In First Out method

<table>
<thead>
<tr>
<th>Date</th>
<th>Received</th>
<th>Issued</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td>Rate</td>
<td>Value</td>
</tr>
<tr>
<td>1/3/2010</td>
<td>100</td>
<td>10</td>
<td>1000</td>
</tr>
<tr>
<td>4/3/2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/3/2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18/3/2010</td>
<td>150</td>
<td>9</td>
<td>1350</td>
</tr>
<tr>
<td>20/3/2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30/3/2010</td>
<td>50</td>
<td>8</td>
<td>400</td>
</tr>
<tr>
<td>31/3/2010</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Value of inventory/Value of closing stock=400
Solution according to LIFO method

<table>
<thead>
<tr>
<th>Date</th>
<th>Received</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td>Rate</td>
<td>Value</td>
<td>Quantity</td>
<td>Rate</td>
<td>Value</td>
</tr>
<tr>
<td>1/3/2010</td>
<td>100</td>
<td>10</td>
<td>1000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4/3/2010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>50</td>
<td>10</td>
<td>500</td>
</tr>
<tr>
<td>10/3/2010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25</td>
<td>10</td>
<td>250</td>
</tr>
<tr>
<td>18/3/2010</td>
<td>150</td>
<td>9</td>
<td>1350</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>20/3/2010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>125</td>
<td>9</td>
<td>1125</td>
</tr>
<tr>
<td>30/3/2010</td>
<td>50</td>
<td>8</td>
<td>400</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>31/3/2010</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>50</td>
<td>8</td>
<td>400</td>
</tr>
</tbody>
</table>

Value of inventory/ Value of closing stock = 475

Example:
The following transactions took place in respect of a material item:

<table>
<thead>
<tr>
<th>DATE</th>
<th>RECEIPTS (QTY)</th>
<th>RATE PER UNIT (RS)</th>
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Prepare the priced ledger sheet pricing the issues at weighted average rate.
Solution according to weighted average method

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Lesson-48
Labour cost and overheads

48.1. INTRODUCTION
Overheads represent spending on resources or services which benefit all or some units of products and services and therefore those cost must be assigned to cost units. Methods for assigning overheads to cost units require analysis of different factors operating in a particular situation.

Scope and objectives of overheads
Overhead is the total of indirect material, indirect labour, indirect expenses. Thus, it is any cost which not directly attribute to a cost unit. The term ‘indirect’ means which cannot be allocated, but they are absorbed by the cost centre. Overhead is a distinct element of cost, and needs different treatment in accounting and control compared to direct cost element.

48.2. CLASSIFICATION OF OVERHEADS
All overheads can be classified element wise into indirect material, indirect labour, and indirect expenses. As well as by nature of expense e.g. consumable stores, repair-parts, salaries, maintenance, depreciation etc. Classification of overhead with relation to its function can be classified into:

1. Factory overhead
   It can also be termed as Manufacturing or production overhead. It is the total indirect costs associated with production activities; it begins with the purchase of material and ends with primary packing of product.

2. Administrative overhead
   It can also be termed as Office overhead. It is the total cost of formulating the policy, it handles with the activities that are not directly associated with the production, selling, distribution, research or development activity or function. Examples of such overhead are office supplies, printing, stationary, salaries to office staff etc.

3. Selling overheads
   This refers to those expenses which are associated with marketing and selling activities. For examples: Salaries and commission of salesmen, selling agents etc.

4. Distribution overhead
   These are the total indirect costs associated with finished goods. It begins with primary packed product available for dispatch and ends with making reconditioned returnable empty container (If any available for reuse).
   Classification of overheads can also be done as follows:
   1. Fixed overhead
   2. Variable overhead
   3. Semi fixed overhead

   Fixed overhead
These are the type of overhead that tend to remain unaffected by the volume of production or sale within a defined period of time, e.g. rent, rates, insurance, audit fees, etc. Fixed overhead changes with change in price level.

**Variable overhead**
These are the overhead that tend to change with the change in production volume. There is a linear relationship between the variable overhead and output. E.g. Indirect material. Indirect labour, power and fuel, lighting and heating expenses, salesmen commission etc.

**Semi fixed overhead**
They are also termed as semi variable overhead. These are certain expenses that neither remains fixed for all levels of activity nor vary in sympathy with the change in output. E.g. repairs and maintenance expenses remain fixed, if production does not fluctuate widely. But if production increases beyond the relevant range, additional expenditure on maintenance may be necessary, which may not vary directly with production

### 48.3. LABOUR COSTS

**Following are the main characteristics of labour costs**

a) Labour cost is a significant element of cost especially in an organization using more manual operations. It is the cost of human endeavour in the product and requires coordinated efforts for its control.

b) The management objective of keeping labour cost as low as possible is achieved by paying higher wages to limited satisfied workmen with high productivity. Low wages do not necessarily mean low labour cost.

c) In recent labour agreements, it has been found that substantial increase in wages has been granted corresponding increase in productivity; thereby reducing labour cost per unit. The gain is reflected both in labour cost as well as in overhead expense per unit, since overheads are distributed over larger volume.

d) The productivity of labour is quite flexible. Given the right type of motivation and incentive, it can reach an amazing scale. It does not have any limitation like machines.

e) Lastly, in India, under existing regulations, wages may be considered as fixed cost or committed cost rather than discretionary cost. Once hired, it becomes very difficult to remove a worker, and therefore, efforts should be made to make best use by imparting proper training, giving better tools & providing favourable working conditions. With this in mind, the management has to design methods of controlling labour cost.

In large organizations, the following departments affect the control of labour cost:

1. Personnel Department: This department is responsible for manpower planning, recruitment, training, maintaining records of staff and workmen and reporting to chief inspector of factories and to top management on performance, overtime, absenteeism, leave, etc.

2. Industrial Engineering Department: This department prepares plans and specifications of each job, supervises production activities, undertakes time and motion studies, perform job analysis, etc.

3. Time-Office: This department is primarily responsible for collection of data relating to attendance, time spent on jobs or process by workmen, and providing information on attendance and leave to payroll department.

4. PAYROLL DEPARTMENT: This department is responsible for computing total and net earnings of each worker, preparation of payroll and maintenance of various records relating to payroll.
5. COST DEPARTMENT: This department collects and classifies all cost data relating to labour utilization by departments, and allocates them to respective job or process as per available documents.

48.4. DIRECT AND INDIRECT LABOUR COSTS

Labour costs may be classified into direct and indirect labour costs. Direct labour refers to the time spent in altering the condition, construction, composition, conformation or condition of the products manufactured. Thus, the time spent by worker identifiable with a particular job or process or operation is a direct labour and is considered directly variable with the output.

All other labour hours spent for running of the factory in general, and cannot be directly identified with a job or process or operation are identified as indirect labour. Examples of indirect labour are salaries and wages paid to inspectors, supervisors, maintenance staff, assistants in purchase, stores and offices, security staff, etc.

Again, workers of the production department are engaged in productive job or processes are known as direct workers. Labour hours of direct workers which cannot be identified with a job or process, such as idle time, waiting time, etc shall be treated as indirect labour.

Same treatment is made when direct labourers assist maintenance staff in machine repairs. Strictly speaking, the distinction between direct and indirect labour depends on the nature of work – practicability and expediency. The distinction is important because while direct labour is charged to product cost, indirect labour is treated as a part of overhead expenses. Direct labour being variable can be easily controlled. But indirect labour cost has to be controlled by preparing the budget for each department and comparing actuals against budget periodically.

48.5. MANPOWER PLANNING, RECRUITMENT AND TRAINING

Personnel department initiates action for recruitment after obtaining authorization from proper authority. The department looks for the correct candidate from within the organization, failing which releases advertisement in the paper or contacts agency or employment exchange. After screening, candidates are normally put to test and interview in one or two rounds. Appointment letter is issued to the successful candidates specifying the position, grade, job description and other usual terms and conditions of service.

Time booking

Time booking refers to actual utilization of time in the concerned department, job or process or operation. The following documents are generally maintained for the purpose:

1. Job Card or Job Ticket: A job card or job ticket is used to record the time spent on each job, having a specified work order or job order number.
2. Daily Time Sheet: Daily time sheets are used where card time recorders are not used.
3. Weekly Time Sheet: Weekly time sheets are similar to daily time sheets with the difference that the worker records all jobs undertaken during the week.
4. Reconciliation Of Attendance Hour With Time Booked: Time recorded at the gate or at the department as evidence by clock card or attendance register must reconcile with the hours spent in the department in job or process or operation along with idle or wasted time.

If clock card shows more hours as compared to total time booked on various jobs or products or operations, the difference is reported as idle time.

48.6. REMUNERATION METHODS AND INCENTIVE SCHEMES

Remuneration is the reward for labour and service while incentives are stimulation for extra effort to perform more efficiently by way of monetary and/or non-monetary inducements.

REMUNERATION SYSTEM
Wages are paid either on time basis or on output basis. When employees are paid as per hours worked irrespective of quantum of output produced, the system is called time rate. When payment is made on the basis of production or output only, it is called a piece rate. A combination of time rate and piece rate is also used.

1. **Time Rate At Ordinary Level**
   Under this method, payment is made on the basis of time worked irrespective of the output. However, such payments must be in conformity with the existing legislation including Minimum Wages Act.

2. **Time Rate At High Wages Level**
   This method is similar to the earlier one, with the difference that time rates are fixed at a higher level compared to rates prevailing in the industry in the neighbouring areas. Overtime is normally not paid.

3. **Graduated Time Rate**
   Under this method, time rate consists of two elements such as basic rate which is fixed with the nature of the job and the variable element like dearness allowance, which depends on the local cost of living index and merit awards for personal qualities of the employee.

4. **Straight Piece Rate**
   Under this system, payment is made on the basis of a fixed amount per unit of output irrespective of time taken. Worker’s earnings equals to the number of units produced multiplied by rate per unit. Piece rate may be fixed on the basis of standard time required to produce one unit. The rate is expressed per standard hour.

5. **Piece Rate With Guaranteed Daily Rate**
   Under this system, daily or hourly rate is guaranteed to those workmen who cannot achieve the piece rate norm, and whose earning remains below minimum wages level prescribed by the Payment of Minimum Wages Act.

6. **Differential Piece Rate**
   F.W. Taylor, the father of scientific management introduced differential piece rates in terms of money – a lower piece rate for those who failed to achieve the standard and a higher piece rate for those who achieved or excelled the performance standard.
   Workers were paid as per rates applicable to their output. The difference between the lower and higher piece rates were kept so wide, that an efficient worker was amply rewarded, while a slow worker was punished. There was no guaranteed minimum wages.

**NON-MONETARY INCENTIVES**
Incentives to the workmen could be given by way of good working environment, facilities for various needs of the employees, free benefits which are not related to job functions, etc.
Non-monetary incentives may be offered in several ways, some of which may be free, while others may be subsidized. A few examples are quoted below:

- Canteen – free or subsidized
- Fair price shop – subsidized
- Medical facilities for employees and their families
- Education & training facilities – to the employee and his children
- Recreation club
- Housing facility
- Other welfare facilities like holding sports, annual day, long service awards, etc.
- Funds contribution – subsidies to sick and benevolent funds

**IDLE TIME AND OVERTIME**
Idle time refers to that portion of hours paid which are not utilized for productive purposes. Idle time can be classified under normal and abnormal idle time.
Idle time can be controlled by adoption of the following measures:
1. Preparation and analysis of labour utilization report with breakdown of idle time
2. Minimizing machine breakdown by adopting preventive maintenance
3. Proper material and production planning, and follow-up system
4. Timely purchase of materials and components

ACCOUNTING OF IDLE TIME
Normal idle time of all workers should be collected under standing order number and charged to factory overheads. However, some of the normal idle time of direct workers which are associated with the job or the work order, such as time taken for machine setting, change-over or tool setting, can be added to the product cost as direct wages by inflating the hourly rate of wages.

LABOUR TURNOVER
Labour turnover is defined as the rate of change of labour force in an organization during a specified period. Measurement of labour turnover should be made department-wise and for skilled and highly skilled labours, separately, instead of a blanket rate.
There are three distinct methods of measuring labour turnover based on separation and replacement of labour.
The methods of computing labour turnover are:
1. Separation method labour turnover
2. Replacement method labour turnover
3. Flux method labour turnover

CAUSES OF LABOUR TURNOVER
There are various causes of labour turnover and that can be broadly classified into the following three categories:
1. Personal causes
2. Unavoidable causes
3. Avoidable causes
   Generally high labour turnover results in increased cost and low productivity due to the following situation:
   (a) It disturbs the regular workforce
   (b) It increases defectives and spoilage, and may adversely affect machines and equipments for inefficient handling
   (c) For new recruits, selection, training and orientation expenses lead to increased costs.
REFERENCES


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