

input, two variable input.

The

Production function:

The functional relationship between input and output is known as production function. The production function states the maximum quantity of output which can be produced from any selected combination of inputs. In other words, it states the minimum quantities of input that are necessary to produce a given quantity of output that are output.

The production function can be expressed in form of an equation in which Output is the dependent variable & inputs are the independent variables. The Eq is expressed as follows:

$$Q_x = f(L, K, T, \dots, n) \text{ where,}$$

Q_x = Output

L = labour

K = capital

T = level of technology

n = other inputs employed in production

Production Functions with Two Variables:

The law of variable proportions is the modern approach to the 'law of Diminishing Returns'. It is now usually called law of Variable Proportions. It can also be called the law of Diminishing Marginal Product of One Diminishing Marginal Product of one factor while keeping the other input factors constant. The law of variable proportions states, "as the proportion-

Production Function with Two Input Variables

Laws of Returns to Scale is a long run concept. In the long run, all factors of production become variable as the firm is able to alter its stock of input in long run which is not the case in short run when all factors are fixed. In some part of the behaviour of output is analysed with the help of laws of returns to scale, thus this law takes into consideration not the varying units of input but changing scale of production.

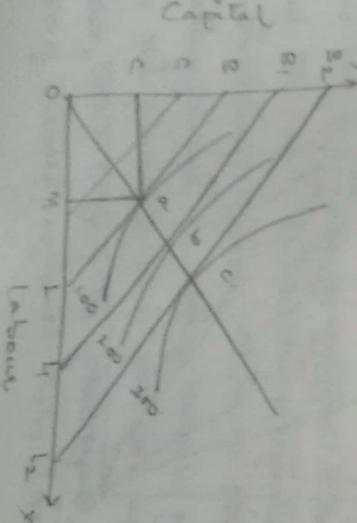
To understand a production function with two variable inputs it is necessary to know the concept of isoquant or iso-product curve

Iso-Quant — the shape of an iso-quant reflects the ease with which a producer can substitute among different quantities maintaining the same level of output.

Iso-cost — different combination of inputs that can be purchased at given expenditure level. Iso cost line shows various combinations of labour & capital that the firm can buy for given factor prices.

producer's Equilibrium —

The points of tangency of isoquant & iso-cost curves depict optimal input combination at different levels.



(ii) the concept 'Returns to scale', consider first case.

A return to scale is the rate at which the output increases with the increase in all input proportionately.

There are three cases of Returns to scale:

- * Increasing Returns to Scale
- * Constant Returns to Scale
- * Diminishing Returns to Scale

Increasing Returns to Scale:

When inputs are increased in a given proportion, output increases in a greater proportion, the Returns to scale are said to be increasing. In other words, proportionate increase in all factors of production results in a more than proportionate ↑ in output is a case of Ring Returns to scale. Thus, if all inputs are doubled then total output is more than doubled.

For example, If inputs are fed by 40% & output fed by 50%, Return to scale are Ring. It is first stage of production. If industry is Enjoying Ring Returns, then its marginal product ↑ & As the pf expands, marginal costs come down.

Ring Returns: % change in op > % change in ip.

Constant Returns to Scale:

When ip's are fed in a given proportion & op ↑s in the same proportion, the Returns to scale are said to be constant. Thus, If all ip's are doubled then total op is also doubled. For Example, If ip's are fed by 40% & op also ↑s by 40%, the Returns to scale are said to be constant.

Constant Returns: % change in output = % change in inputs.

Diminishing returns to scale :-

If the firm continues to expand beyond the stage of constant returns, the stage of diminishing returns to scale will start to operate. If a proportionate ↑ in all O/P's results in less than proportionate ↑ in O/P, the returns to scale are said to be decreasing. Thus, if all O/P's are doubled then total O/P is less than doubled. For example, if O/P are↑ed by 40%, but O/P↑es by only 30%, it is a case of "diminishing returns to scale". Using return to scale implies rising costs.

Diminishing returns : % change in O/P < % change in O/P.

Types of cost :-

There are various classifications of cost based on the nature and the purpose of calculation. But in Economics for accounting purpose, the following are the important Cost Concepts :-
1) Actual cost / Outlay cost / Absolute cost / Accounting Costs : The cost or expenditure which a firm incurs for producing or acquiring a good or service.
2) Explicit cost : Cost actually paid by firm. If the factor of production is hired or rented then it is an explicit cost.
3) Opportunity cost : The revenue which could have been earned by employing that good or service in some other alternative use.

Sunk cost :-

Are retrospective costs that have already been incurred and cannot be recovered.

4) Historical cost —

the price paid for a plant originally at the time of purchase.

5) Replacement cost —

the price that would have to be paid currently for acquiring the same plant.

6) Incremental cost —

is the addition to costs resulting from a change in the nature or level of business activity.

7) Book cost —

costs which do not involve any cash payments but a provision is made in books of accounts in order to include them in the profit & loss account to take advantage.

8) Social cost —

total cost incurred by society on account of producing good or service.

9) Controllable cost —

costs which can be controlled by the executives are called as controllable cost.

10) Shut down cost —

cost incurred if the firm temporarily stops its operation.

11) Economic costs are related to future —

they play a vital role in business decisions as they costs considered in decision making are usually future costs.

short run cost structure —

there are two categories of costs in short run: fixed cost & variable cost and some other

* Fixed cost — Some inputs are used over a period

of time for producing more than one batch of goods.
the costs incurred in these are called fixed cost

* Variable Cost :— when output has increased the firm

spends more on these items.
Ex the money spent on labour wages, raw material.

Total cost curves

Average fixed cost (AFC) curve:

$$\text{AFC} = \frac{\text{TFC}}{Q}$$

Average variable cost (AVC) curve:

$$\text{AVC} = \frac{\text{TVC}}{Q}$$

Average total cost, or avg cost (ATC or AC) curve:

$$\text{ATC} = \frac{\text{TFC} + \text{TVC}}{Q}$$

$$\text{AC} = \frac{\text{TFC}}{Q} + \frac{\text{TVC}}{Q}$$

Marginal cost (MC) curve:

$$\begin{aligned} \text{TC} &= \text{TFC} + \text{TVC}; \quad \text{MC} = \frac{d\text{TC}}{dQ}; \quad \text{MC} = \frac{d(\text{TFC} + \text{TVC})}{dQ} = \\ &= (\frac{d\text{TFC}}{dQ}) + (\frac{d\text{TVC}}{dQ}) \end{aligned}$$

Since, TFC does not change in short-run, MC
depends on only TVC

$$\frac{d\text{TFC}}{dQ} = 0$$

$$\text{MC} = \frac{d(\text{TVC})}{dQ}$$

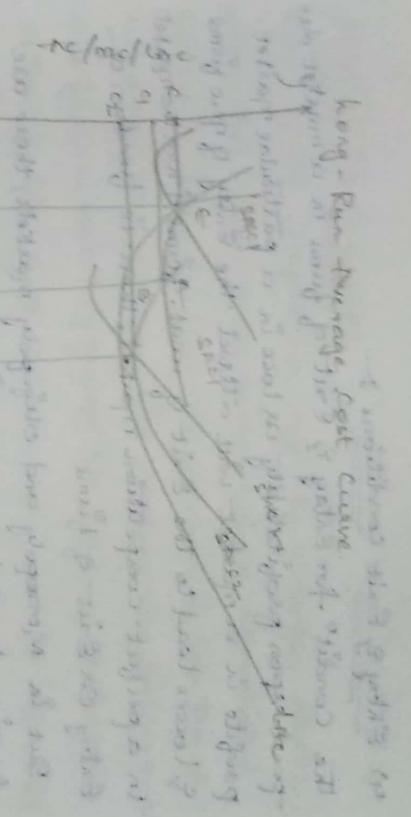
Long Run Cost Structures :—

The term long run is defined as that length of time
over which the firm gets an opportunity to vary all
need be the quantities of all its inputs

In other words,

these are no fixed factors in the long run
therefore these are no fixed costs.

Raw factors are variable & as results all costs are
variable



4) Nature of Competition (Monopoly, Oligopoly, perfect competition, monopolistic competition).

5) Number and Nature of Sellers:

The market structures are influenced by the number & nature of sellers in market. They range from large no. of sellers in perfect competition to a single seller in pure monopoly, to two sellers in duopoly, to a few sellers in oligopoly & many sellers of diff products.

2) Number and Nature of Buyers:

The market structures are also influenced by number & nature of buyers in the market. If there is a single buyer in market, this is known as monopoly called monopsony market.

3) Nature of Product:

It is the nature of product that determines the market structure. If there is product differentiation products are close substitutes & the market is characterized by monopolistic competition.

4) Entry & Exit conditions :-

The condition for entry & exit of firms in a market depends upon profitability or loss in a particular market. Profit in a market will attract the entry of new firms & losses lead to the exit of weak firms from the market. In a perfect competition market, there is freedom of entry or exit of firms.

But in Monopoly and Oligopoly markets, there are barriers to entry of new firms.

Perfect competition market -

A perfectly competitive market is one in which the no. of buyers and sellers is very large, all engaged in buying and selling a homogeneous product without any artificial restrictions & possessing perfect knowledge of market at any time.

Monopoly market -

Monopoly is a market situation in which there is only one seller of a product with 'difficulty' to entry of others. Product has no close substitutes. The cross elasticity of demand with every other product is very low. Thus means that no other firm produces a similar product.

Oligopoly -

Oligopoly is a market situation in which there are a few firms selling homogeneous or differentiated products. It is difficult to pinpoint the number of firms in 'competition among the few'. With only a few firms in market, the action of one firm is likely to affect the others.

Monopolistic competition:

Monopolistic competition refers to a market situation where there are many firms selling a differentiated product. "There is competition which is keen, though not perfect, among many firms making very similar products."

No firm can have any perceptible influence on the price.

Output policies of other sellers can it be influenced much by their actions.

5) Types of Pricing: Break Even analysis, CVP Analysis, Product life cycles

A
1) Types of Pricing:

1) Cost plus Pricing : In factoring profit into the cost

One method used by business to determine how to price goods & services. In cost-based pricing the seller's costs are the primary consideration.

Costs set the floor for the price that the company can charge.

2) Pricing based on firm's objectives:

If your business mission is to be a leader in your industry, you may want to consider a sales maximization pricing objective.

3) Competition based pricing

It involves setting prices based on competition strategies, costs, prices & market offerings. In highly competitive markets consumers will base their judgements of a product's value on the prices that competitors charge for similar products.

- a) Penetration pricing
- b) Entry Deterrence pricing
- c) going rate pricing

a) Retail pricing

Product life cycle

As consumers, we buy millions of products every year.

And just like us, these products have a life cycle. older,

long-established products eventually become less popular, while in contrast, the demand for newer

modern goods usually increases quite rapidly after they are launched.

COG most companies understand the different product life cycle stages, & that the products they sell all have a limited lifespan, the majority of them will invest heavily in new product development

In order to make sure businesses continue to grow. Some of the most important stages through which

product life cycle passes are as follows:

- 1) Introduction
- 2) Growth stage
- 3) Maturity stage
- 4) Saturation stage
- 5) Decline

Break Even Analysis

The break-even point is break-even level represents the sales amount - in either unit or revenue terms

that is required to cover total costs, consisting of fixed & variable cost to the company

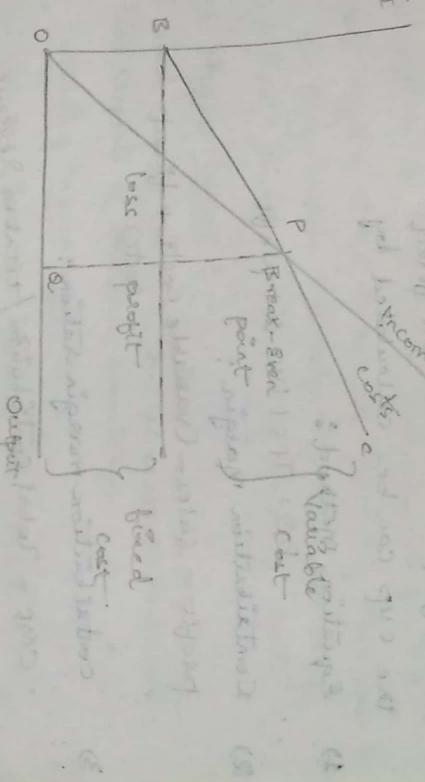
Total profit at break-even point is zero.

It is only possible for a firm to Break-Even if the dollar value of sales is higher than the variable cost per unit.

Methods of Break Even Analysis

1) Graphical method:

The point at which neither profit nor loss is made is known as "Break-Even point" & is represented on the chart below by intersection of two lines.



2) Equation Method:

The break-even point can be directly computed in terms of total Revenue (TR) & Total costs (TC) as

$$TR = TC$$

$$P \times X = TFC + V \times X$$

$$P \times X - V \times X = TFC$$

$$(P-V) \times X = TFC$$

$$X = \frac{TFC}{P-V}$$

Cost Volume Profit Analysis

Cost volume profit analysis is used to determine how changes in costs & volume affect a company's operating income & net income. In performing this analysis there are several assumptions made,

Including:

- * sales price per unit is constant
- * variable costs per unit are constant
- * total fixed costs are constant

* Everything produced is sold

* Costs are only affected by activity changes

* CVP analysis requires that all the company's costs, including manufacturing, selling & administrative costs, be identified as variable or fixed

The CVP can be calculated by

1) Equation method:

$$P \cdot Q = TFC + AVC \cdot Q + Profit$$

2) Contribution margin:

$$\text{Profit} = \text{Sales} - (\text{Variable costs} + \frac{\text{Fixed costs}}{\text{Sales}})$$

3) Contribution margin ratio:

$$CMR = \frac{\text{Total Contribution}}{\text{Total Revenue}}$$

Contribution Margin = Sales - Variable costs - Fixed costs

$$CMR = \frac{Sales - Variable costs}{Sales}$$

$$CMR = \frac{X \cdot V + X \cdot F - X \cdot C}{X \cdot V}$$

$$CMR = X \cdot V - X \cdot C$$

$$CMR = X \cdot (V - C)$$

$$CMR = X$$

$$CMR$$

and materials at least as important to day-to-day analysis than financial ratios because it helps managers understand what is responsible for unit sales growth or decline. For example, sales increase, cost decrease

Production

Factors of production are not relevant to CVP analysis because they don't affect unit sales.

Total costs don't affect

- (Q) financial Accounting Concepts, Conventions, Accounting Equation.

Ans :- the Business Entity Concept :-

The Business Entity Concept provides that the accounting for a business or Organisation be kept separate from the personal affairs of its Owner, or from any other business or Organisation. This means that the Owner of a Organisation should not place any personal debts.

* Dual Aspect Concept :-

Under dual aspect concept the Accountant deals with the two aspects of business transaction.

* the continuing concern concept :-

It is assumed that the business will continue for a long time. With the assumption fixed assets are recorded in the books at their original cost.

* the principle of conservatism :-

The principle of conservatism provides that accounting for a business should be fair and reasonable.

* the objectivity principle :-

The objectivity principle states that accounting will be recorded on the basis of objective evidence.

* the Revenue Recognition Convention or Accrual Concept

The Revenue recognition Convention provides that revenue be taken into account at the time the transaction is completed.

* the Matching principle :-

The matching principle is an extension of the revenue recognition convention.

the cost principle

Usually all the transaction will be recorded at cost in the books. This approach preferred because it is difficult and time consuming to ascertain the market values.

the consistency principle

The consistency principle requires accountants to apply the same methods and procedures from period to period. When they change a method from one period to another, they must explain the change clearly on the financial statements.

the materiality principle

The materiality principle requires accountants to use generally accepted accounting principles except when to do so would be expensive or difficult & where it makes no real difference if the rules are ignored.

the full disclosure principle

The full disclosure principle states that any and all information that affects the full understanding of a company's financial statements must be included with the

Conventions :-

A Convention, in the sense of a meeting, is a gathering of individuals who meet at an arranged place & time in order to discuss or engage in some common interest. The most common conventions are based on industry, profession and fan-dom.

* Trade Conventions :-

Typically focus on a particular industry or industry segment, & feature keynote speakers, vendor displays, & other information & activities of interest to the event organizers and attendees.

* Professional Conventions :-

Focus on issues of concern along with advancements related to profession.

Such conventions are generally organized by societies or communities dedicated to promoting topic of interest.

* Fan Conventions :-

Usually feature displays, shows, and talks based on pop culture, guest celebrities.

* Science Fiction Conventions :-

Traditionally partake of the nature of both professional conventions & fan conventions, with the balance varying from one to another.

Conventions also exist for various hobbies, such as Gaming or model railroads.

* Co-located Conventions :-

When 2 or more conventions are held at same place & time they are Co-located.

Accounting Equation:

The fundamental accounting equation, also called the balance sheet equation, represents the relationship between the assets, liabilities, and owners' equity of a person or business.

- * It is foundation for double-entry book keeping system for each transaction, the total debit equal the total credit. It can be expressed as furthermore:

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

$$A = L + E$$

$$\text{Assets} = \text{Stockholder Equity} + \text{Liabilities}$$

$$A = Oe + L$$

$$\boxed{\text{Assets} - \text{Liabilities} = (\text{shareholder's or owner's equity})}$$

$$\text{Owner's equity} = \text{Contributed Capital} + \text{Retained Earnings}$$

$$\text{Retained Earnings} = \text{Net Income} - \text{Dividends}$$

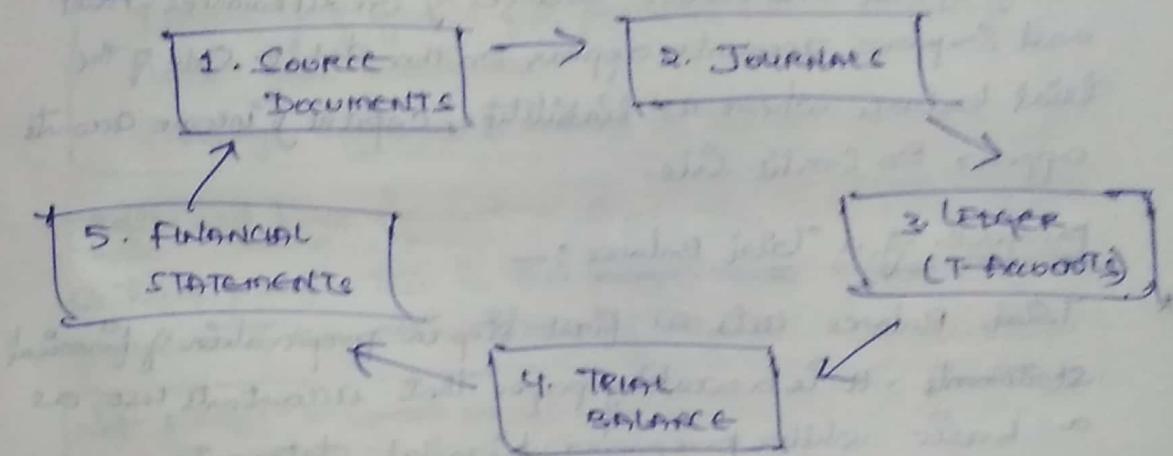
$$\boxed{\text{Net Income} = \text{Income} - \text{Expenses}}$$

20) Financial Accounting Cycle :-

Ans Accounting cycle is a step by step process of recording, classification & summarization of economic transactions of a business. It generates useful financial information in the form of financial statements including income statement, balance sheet, cash flow statement and statement of changes in equity.

The time period principle requires that a business should prepare its financial statements on periodic basis.

Major steps in Accounting cycle :-



Journal Entries :-

The recording of financial data pertaining to business transactions in a journal such that the debits equal credits.

Ledger :

Collection of an entire group of similar accounts in double-entry bookkeeping. Also called book of final entry, a ledger records classified & summarized financial information from journals as debits and credits, and shows their current balances. In manual accounting systems, a ledger is usually a loose leaf binder with a separate page for each ledger account.

Structure of ledger:-

Date	Particulars	J.R.	Amount	Date	Particulars	J.R.	Amount
2005 Dec 14	Cash A/c		1,200	2005 Dec 14	Purchases A/c		2,000

Trial balance:-

Trial balance is a list closing balances of ledger accounts on a certain date & is the first step towards the preparation of financial statements. It is usually prepared at the end of an accounting period to assist in the drafting of financial statements. Ledger balances are segregated into debit balances & credit balances - Asset and Expense accounts appear on the debit side of the trial balance whereas Liabilities, Capital & Income accounts appear on credit side.

Purpose of a Trial Balance:-

- * Trial Balance acts as first step in preparation of financial statements. It is a working paper that accountants use as a basis while preparing financial statements.
 - * Trial Balance ensures that for every debit entry recorded, a corresponding credit entry has been recorded in the books in accordance with the double entry concept of accounting.
 - * Trial Balance ensures that the account balances are entered accurately extracted from accounting ledgers.
 - * Trial Balance assists in the identification and rectification of errors.
- Q) Preparation of financial Accounts Performance of (Trading, profit & loss a/c, Balance Sheet)

TRADING AND PROFIT AND LOSS ACCOUNT.

Financial Ac
profit & loss
the financial
final account

1.

Trading &
other accounts
sold.

Gross profit
Cost of goods

Draw
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Caret

2.

Profit or
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3.

Balance
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Financial accounts of sole traders : show the calculation of profit or loss incurred during the period & the financial position of business at the end of the period.
Final accounts usually prepared from a trial balance.

1. Trading Accounts - deals with trading (buying & selling).
The account shows the calculation of profit earned on goods sold.

$$\text{Gross profit} = \text{sales} - \text{cost of goods sold}$$

$$\text{Cost of goods sold} = \text{Opening stock} + \text{purchases} + \text{Carriage inwards} - \text{closing stock}$$

Drawings of goods for personal use is deducted with from purchases

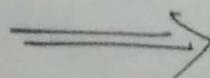
Carriage inwards is added to the purchases

2. Profit and Loss Account - shows the calculation of final or true profit. This is the profit after all running expenses and any other items of income.

$$\text{Net profit} = \text{Gross profit} + \text{other incomes} - \text{expenses}$$

3. Balance Sheet - is a statement of the financial position of the business on a certain date. It shows what the business owns and amounts owing to the business. the assets and what the business owes, the liabilities and the capital.

Financial Account performata of balance sheet



Format of Balance sheet

Balance sheet Template

Company Name Here

Balance sheet

For the period Ended _____

Assets	Liabilities
<u>Current Assets</u>	
Cash	000000
Short-term Invest.	00000
Accounts Receivables	00000
Inventories	0000000
Prepaid Insurance	00000
Others	0000000
<u>Long term Invest</u>	
Stock Investments	000000
Cash value of Insurance	0000000
	000000
<u>Fixed Assets</u>	
Land	000000
Buildings, Equipment	0000000
less Accumulated depreciation	(00000) 000000 0000000
<u>Intangible Assets</u>	
Good will	0000000
<u>Other Assets</u>	
Receivables from Employees	00000000
<u>Total Assets</u>	000000000

<u>Liabilities</u>			
<u>Current Liabilities</u>			
Accounts payable		000000	
Salaries payable		00000	
Accrued interest		0000	
Taxes payable		000000	
Current portions notes			00000000
<u>Long Term Liabilities</u>			
Note payable		000000	
Mortgage liability		000000	00000000
<u>Total Liability</u>			00000000
<u>Stockholder's Equity</u>			
Capital stock		0000000	
Retained Earnings		000000	
<u>Total Stockholder's Equity</u>			000000
<u>Total Liabilities</u>			00000000

48) Journal, ledger, trial balance.

Ans Journal: The recording of financial data (taken usually from a journal Voucher) pertaining to business transactions in a journal such that the debits Equal Credits. Journal Entries provide an audit trail and a means of analyzing the effects of the transactions on an organization's financial position. See also journalizing.

Ledger: Collection of an entire group of similar accounts in double-Entry bookkeeping. also called Book of final Entry, a ledger records classified and summarized financial information from journals (the 'Books of first Entry') as debits and credits, and shows these current balances. In manual accounting systems, a ledger is usually a loose leaf binder with a separate page for

each ledger account. In Computerized systems, it can't be interlinked digital files, but follows the same accounting principles as the manual system.

System structure of ledger:-

Date	particulars	To amount	Date	particulars	To amount
20/05	Cash recd	1,200	20/05	Purchases	3,000
20/05			20/05	T/c	
17					

Trial balance:-

Trial balance is a list of closing balances of ledger accounts on a certain date & is the first step to make the preparation of financial statements. It is usually prepared at the end of an accounting period to assist in the drafting of financial statements. Ledger balances are segregated into debit balances and credit balances.

Debiting Expenses Accounts appear on the debit side of the trial balance while all Liabilities, Capital & Income accounts appear on the Credit side. If all accounting entries are recorded correctly and all the ledger balances appearing in the trial balance must equal to sum of all credit balances.

Purpose of trial balance:-

trial balance acts as first step in preparation of financial statements

it is working paper that accountants use as basis while preparing financial statements.

trial balance ensures that the account balances are accurately extracted from accounting.

trial balance assists in the identification & detection of errors.

Thomas Smith wrote how errors had 2 effects on getting

so much wanted financial figures in a method of long strings of now reduced final sum as follows

e.g) Double entry?

Double entry?

Double entry is
convenient to
use.

in two aspect

(1) Recording of
known as trial

'Credit aspect'

there two aspects
of trial balance

The principle is
one recorded
entry - accor-

necessarily has
feature of
The following

-entry back-1

Double effect
by debiting
equal effect
to credit

1. Double effect

2. Debit and

for example

for the be-

as well

3. Debit and
for example
for the be-

4. Account:

5. Adjustment

Entries

System.

Under dual aspect concept the accountant deals with the two aspects of business transaction "i.e.",

(i) Receiving aspect and (ii) giving aspect, receiving aspect is known as 'Debit Aspect' and giving aspect is known as 'Credit Aspect'. In double entry book keeping system these two aspects are recorded facilitating the preparation of trial balance and the final accounts.

The principle under which both debit & credit aspects are recorded is known as the principle of double entry. According to this principle every debit must necessarily have a corresponding credit and vice versa.

Features of Double Entry System of Book-keeping

The following are some features or characteristics of double entry book-keeping.

1. Double Effecting :— It follows the principle of double aspect by debiting and crediting the transaction.
2. Equal Effect :— It assumes that debit must be equal to credit amount i.e. It considers the effect of equal amount.
3. Debit and Credit :— It has two sides i.e. debit & credit for example, the benefit received is given the name debit & the benefit given is given credit.
4. Account :— It maintains the records of personal, real as well as nominal accounts.
5. Aritmetical Accuracy :— Another feature of double entry system of book keeping to check arithmetical

accuracy by preparing trial balance.

Advantages of Double Entry:

- * Complete data is available
- * provides an arithmetic check on book keeping
- * Helps track debits and credits
- * can help ascertain the financial position of the business
- * makes it easier to produce year end accounts

Disadvantages of Double Entry:

- * Expensive
- * harder to understand
- * requires hiring External staff and time - Consuming

stage 1 - 2 - initial stock values starting off
initials of beginning with no inward or outward movement
initials from supplies start at purchases -
over with the final purchases covered purchases
initials - goods from suppliers start to enter
stocks initialis to write down and give out
initials of supplies start at purchases -
initials of purchases start at purchases and
initials of goods - goods start to enter
initials of supplies start at purchases -
initials of goods start at purchases -
initials of goods start at purchases -

initials of goods start at purchases -

- (a) Concept of Ratio Analysis, Liquidity Ratios, Profitability Ratios (Formulas)

Concept of Ratio Analysis:

Ratio analysis is the mathematical form of expressing the numerical or arithmetical relationship between two figures. It is a widely used financial analysis tool which is expressed when one figure is divided by another. It is the systematic use of ratios that determines and interprets the numeric relationship b/w two financial items. Ratio Analysis Assesses the Strength & Weakness as well as Evaluates the historical performances and current financial conditions of a firm.

According to Kohler, "A ratio is the relationship of one amount to another Expressed as the ratio of or as a simple fraction, integer, decimal fraction, or percentage."

According to Hunt, William & Donaldson, " Ratios are simply a means of highlighting in arithmetical terms of the relationship b/w figures drawn from financial statements."

Financial ratios calculated & analyzed in a particular situation depend on the use of the financial statement.

Importance of Ratio Analysis:

- * Current Ratio & Quick Ratio helps in assessing the short term solvency / liquidity of the firm.
- * Profitability ratios help in Evaluating the financial performance of firm.
- * Ratios show the degree of Efficiency in management & utilization of resources & assets.
- * Ratios help with the planning & forecasting of the firms business activities for periods as ratios tend to have predictor values.

Liquidity ratios:

Liquidity ratios assess a business's liquidity, i.e. its ability to convert its assets to cash and pay off its obligations without any significant difficulty.

(i.e. delay or loss of value)

Liquidity ratios are particularly useful for suppliers, employees, banks etc. Important liquidity ratios are

- 1) Current ratio
- 2) Quick ratio (also called acid-test ratio)
- 3) Cash ratio
- 4) Cash conversion cycle.

Profitability Ratios (formulae):

Profitability ratios measure the ability of a business to earn profit for its owners, while liquidity ratios and solvency ratios explain the financial position of a business. Profitability ratios and efficiency ratios communicate the financial performance of a business.

- 1) Gross Margin Ratio:

$$\text{Gross margin} = \frac{\text{Gross profit}}{\text{Revenue}}$$

$$\text{Gross margin} = \frac{\text{Revenue} - \text{Cost of goods sold}}{\text{Revenue}}$$

- 2) Net profit margin:

$$\text{Net profit margin} = \frac{\text{Net income}}{\text{Net sales}}$$

$$\text{Net sales} = \text{Gross sales} - \text{Sales Tax} - \text{Discounts} - \text{Sales Returns}$$

- 3) Operating margin ratio:

$$\text{Operating margin} = \frac{\text{Operating income}}{\text{Revenue}}$$

4) Return On Investment (ROI) Ratio :-

$$ROE = \frac{\text{Annual Net Income}}{\text{Average Stockholder's Equity}}$$

5) Earnings per share (EPS) :-

$$\text{EPS} = \frac{\text{Net Income} - \text{Preferred dividends}}{\text{Weighted Average Number of Common shares Outstanding}}$$

$$\text{EPS} = \frac{\text{Net Income} - \text{Preferred dividends}}{\text{Weighted Average Number of Common stock}}$$

6) Price/Earnings (P/E) Ratio :-

$$\text{P/E Ratio} = \frac{\text{Current share price}}{\text{Earnings per share}}$$

$$\text{P/E ratio} = \frac{\text{Expected payout ratio}}{\text{Required rate of return} - \text{Dividend growth rate}}$$

7) Dividend Yield Ratio :-

$$\text{Dividend Yield} = \frac{\text{Total dividend payments}}{\text{Total market Capitalization}} = \frac{\text{Dividend per share}}{\text{Current share price}}$$

Q) Turnover ratios, propietary ratios, leverage ratios (formulas).

Ans

Turnover Ratios :-

Activity ratios assess the efficiency of operating of a business. For example, these ratios attempt to find out how effectively the business is converting inventories into sales & sales into cash, or how it is utilizing its fixed assets and working capital, etc.

Key activity ratios are :

1) Inventory turnover ratio :-

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Cost of goods sold = Beginning inventories + Cost of Goods manufactured - Ending inventories

Cost of goods sold figure is reported on the Income Statement

Average Inventories = $\frac{\text{Beginning Inventories} + \text{Ending Inventories}}{2}$

2) Accounts Receivable Turnover Ratio :-

$$\text{Turnover} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivables}}$$

3) Accounts Payable Turnover Ratio :-

$$\text{Turnover} = \frac{\text{Net Credit purchases}}{\text{Average Account payable}}$$

4) Fixed Assets Turnover Ratio :-

$$\text{FATR} = \frac{\text{Net Revenue}}{\text{Avg fixed Assets}}$$

$$\text{Net Revenue} = \text{Gross Revenue} - \text{Sales Returns}$$

$$\text{Avg fixed} = \frac{\text{opening Balance of fixed Assets} + \text{Ending Balance of fixed Assets}}{2}$$

5) Working Capital Turnover :-

$$\text{Working Capital Turnover Ratio} = \frac{\text{Revenue}}{\text{Avg Working Capital}}$$

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Average Working Capital} = \frac{\text{Opening working capital} + \text{closing working capital}}{2}$$

Proprietary Ratio

The Proprietary ratio (also known as the Equity ratio) is the proportion of shareholders' equity to total

assets, & as such provides a rough estimate of the amount of capitalization currently used to support a business. If the ratio is high, this indicates that a company has a sufficient amount of equity to support the functions of business, & probably has room in its financial structure to take on additional debt, if necessary. Conversely, a low ratio indicates that a business may be making use of too much debt or trade payables, rather than equity, to support operating.

(which may place the company at risk of bankruptcy)

$$\boxed{\text{Proprietary ratio} = \text{proprietor's funds} / \text{total assets}}$$

Leverage Ratios (formulas):-

A leverage ratio is any one of several financial measurements that looks at how much capital comes in the form of debt (loans), or assesses the ability of a company to meet its financial obligations.

The leverage ratio is important given that companies rely on a mixture of equity and debt to finance their operations, & knowing the amount of debt held by a company is useful in evaluating whether it can pay its debts off as they come due.

Debt to Capital Employed ratio :-

28) Solvency, leverage ratios (formulas)

Solvency ratios :-

Solvency ratios assess the long-term financial viability of business i.e. its ability to pay off its long-term obligations such as bank loans, bonds payable, etc.

Information about solvency is critical for banks, Employee Owners, bond holders, institutional investors, government, etc.

Key solvency ratios are:

1) Debt to Equity ratio :-

$$\text{Debt-to-Equity ratio} = \frac{\text{Total Liabilities}}{\text{Shareholder's Equity}}$$

2) Fixed charge Coverage :-

$$\text{FCC} = \frac{\text{EBIT} + \text{lease payments other than interest portion}}{\text{short term & long term liabilities}}$$

Leverage ratios (formulas)

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1) Total Assets to Debt ratio :-

$$\text{TADR} = \frac{\text{Total assets}}{\text{long-term debts}}$$

2) Debt-to-Capital Employed Ratio:

$$\frac{\text{Debt-to-Capital}}{\text{Employed ratio}} = \frac{\text{Long-term Debt}}{\text{Capital Employed (or net assets)}}$$

Capital Employed ratio = long-term debt + shareholder's funds.

- (a) Introduction to funds flow statements.

Fund Flow Analysis

A fund flow statement is a statement in summary form that indicates changes in terms of financial position b/w two different balance sheet dates showing clearly the different sources from which funds are obtained and uses to which funds are put.

By depicting all inflow & outflow of fund, the statement shows their net impact on working capital of the firm.

Objectives of fund flow stmt:

- (a) fund flow statement reveals clearly the changes in items of financial position b/w two different balance sheet dates showing clearly the diff source & applications of funds.
- (b) It also reveals how much of total funds is being collected by disposing of fixed assets, how much from issuing shares or debentures.
- (c) It also provides information about the specific utilization of such funds.
- (d) It helps the management in depicting all inflow & outflow of funds which cause a change in working capital of a business organization.
- (e) The projected fund flow statement helps management to exercise budgetary control & Capital Expenditure Control in the enterprise.

- (4) management uses fund flow stmt's for judging the financial & operating performance of the business.

The fund flow analysis involves preparation of two statements :-

- (a) statement or schedule of changes in working Capital
- (b) statement of sources and Applications of funds.

Preparation of fund flow Stmt :-

Generally, two Comparative Balance sheets - One at the beginning & the other at the End of period — are used for preparing a fund flow statement.

- 5Q) Introduction to Cash flow statement

Cash flow Analysis :-

A Cash flow statement is a statement which is prepared by acquiring cash from different sources & the application of the same for different payments throughout the year. It is prepared from analysis of cash transactions, or it converts the financial transactions prepared under accrual basis to cash basis.

The information about the amount of resources provided by operational activities or net income after the adjustment of certain other charges can also be obtained from it. The changes in cash both at the beginning and at the end can also be known with the help of this statement and that is why it is called Cash flow statement.

Objectives of Cash flow statement :-

The primary objective of Cash flow Stmt is to supply the necessary information relating to generation of

Cash flow statement is one of financial statement. It also highlights the future or prospective cash position i.e.,
Cash or Cash Equivalent.

The inflows and outflows of cash can be represented with the help of this statement

- 1) Measurement of cash
- 2) Generating inflow of cash
- 3) classification of activities
- 4) prediction of future
- 5) Assessing liquidity and solvency position.
- 6) Evaluation of future cash flows.
- 7) Supply necessary information to the users
- 8) Helps the management to ascertain cash planning.