

# FINANCIAL MANAGEMENT.

## Syllabus:-

1. Introduction to Financial Management:-  
 Introduction - Meaning of Finance - Business Finance - Finance Function - Types of Finance Function - Organization Structure of Finance Department - Financial Management - Goals of Financial Management - Financial Decision - Role of Financial Manager - Financial planning - Steps in financial planning - Factors influencing financial planning.
2. Time Value of Money:-  
 Introduction - Meaning & Definition - Need, Future value (single flow - uneven flow and annuity) - Present value (single flow - uneven flow and annuity) - Doubling period - Concept of variation - Valuation of Bond, Debentures and Shares - Simple problems
3. Financial Financing Decisions:-  
 Introduction - Meaning of Capital Structure - Factors influencing Capital Structure - Optimum Capital Structure - Computation and Analysis of EBIT (Earnings Before Interest and Tax), EBT, EPS, Leverages - Simple problems.

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#### 4. Investment and Dividend Policy:

**Introduction** - Meaning & Definition of Capital Budgeting - Features - Significance of process - Technology - payback period - A theory Rate of Return (IRR), NPV, present value (MVP), Internal rate of Return (IRR) and profitability index - simple problems.

**Indifference** - Meaning & Explanation - Determinants of Dividend Policy - Types of Dividend - Bonus shares

#### 5. Working Capital Management

**Introduction** - Concept of Working Capital - Significance of adequate working capital - Focus on Indirectly working capital - Determinant of working capital - Sources of working capital.

Schwabh Manojan  
H.P. → Schwabha

- Management of Inventory
- 1) Role
  - 2) Position
  - 3) Co-ordinator

#### 4. INTRODUCTION TO

#### FINANCIAL MANAGEMENT

**Finance**: The flow is derived from the word Finance sets or provisions for business which involves the acquisition and usage of funds in various departments, such as production dept, purchase dept, research and development.

#### Business Finance:

Finance means deals with acquiring & administering over determining funds for an organization. It is not the financial with and overall objective of the enterprise.

#### Finance function:

The finance function is the process of acquiring and utilizing funds of a business. Finance function is related to overall management of an organization. Finance function is concerned with the policy decision. It deals with the use of funds, Type of financing, investment, etc. It is a continuous process.

#### Area of Finance function:

- Assessing the financial requirements
- Raising Money
- Increasing Profitability
- Maintaining balance of flow

### Organizational Structure:



### Financial Management:

It is vitally concerned with the proper management of funds. According to Adams, "Financial Management is concerned with the efficient use of various resources." According to Phillips, "Financial Management is concerned with managing activities that result in acquisition and financing of long-term assets which are made for the firm."

Finance refers to the flow of funds in an organization. Finance refers to a particular area of activity in which the aim is to make profit.

Finance can also be interpreted in two ways, one as fund + management and another as fund + investment.

- #### Scope of Financial Management:
- Estimating financial requirements
  - Providing financial structure
  - Attracting a source of finance
  - Allocating a portion of investment
  - Proper cash management
  - Working capital financial control
  - Proper use of surplus

#### Objectives:

The two objective signs for profit orientation for taking financial decision.

- Profit maximization
- Wealth maximization

#### Profit Maximization:

Profit is the outcome of gain in business activity. In the light of the scope of the business activity, profit is the primary concern of the success of any business.

It is the main objective of the management. It is the result of an organization in a given period.

- The profit is the main goal which first the investment, financing, and financial decision of the enterprise should be oriented to profit maximization.

of the 2000's  
\* In national economic growth, the primary

product is physical and intangible.

• physical economic growth is also the material

and material growth, which aims at increasing

the profit of the business.

• physical economic growth is also called on total

input on business operations. It looks like

maximization.

• material view of the business is in

economic growth. It is concerned with the

people who run the business. The profit

is the main.

• profit is the parameter of measuring the

effectiveness of the business concern. So, profit

is the main factor of the business.

• profit maximization helps a firm to

achieve the best of the business.

• profit maximization is one of the modern

operations, which depends on the material

and material view of the business.

• profit maximization is also the main

operation, which depends on the material

and material view of the business.

• profit maximization is also the main

operation, which depends on the material

Financial Decision:

It is concerned with the financial side

of the business. The main of the business

is equity. It is known as capital structure.

• maximization of the profitability of equity

and the side in the main view in the

view of decisions.

• financial decision:

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Factors leading to project failure

- Inadequate definition
- Poor communication
- Lack of resources
- Poor planning
- Poor management
- Poor leadership
- Poor timing
- Poor coordination
- Poor control
- Poor evaluation
- Poor reporting
- Poor documentation
- Poor risk management
- Poor stakeholder management
- Poor change management
- Poor quality management
- Poor procurement management
- Poor contract management
- Poor legal management
- Poor security management
- Poor environmental management
- Poor social management
- Poor cultural management
- Poor ethical management
- Poor governance management
- Poor compliance management
- Poor sustainability management
- Poor innovation management
- Poor digital management
- Poor data management
- Poor technology management
- Poor infrastructure management
- Poor human resources management
- Poor financial management
- Poor operational management
- Poor strategic management
- Poor tactical management
- Poor administrative management
- Poor organizational management
- Poor project management

Meaning of project management:

- The application of knowledge, skills, tools, techniques, and experience to the most effective way of achieving the project objectives.
- It is a temporary organization that is created to accomplish a specific project.
- It is a cross-functional team that is organized to complete a project.
- It is a group of people who are working together to achieve a common goal.
- It is a process that involves planning, organizing, leading, and controlling the project.
- It is a discipline that involves the application of management principles to the project.
- It is a practice that involves the use of project management tools and techniques.
- It is a profession that involves the use of project management knowledge and skills.
- It is a career that involves the use of project management skills and experience.
- It is a business that involves the use of project management skills and experience.
- It is a service that involves the use of project management skills and experience.
- It is a product that involves the use of project management skills and experience.
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- It is a product that involves the use of project management skills and experience.

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The project is primarily on short term. It may be long term but the duration is not fixed. In the business environment, project management is regarded as inevitable. It is a discipline that involves the use of project management skills and experience.

It is a temporary organization that is created to accomplish a specific project. It is a cross-functional team that is organized to complete a project. It is a group of people who are working together to achieve a common goal.

It is a process that involves planning, organizing, leading, and controlling the project. It is a discipline that involves the application of management principles to the project. It is a profession that involves the use of project management knowledge and skills.

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It can be achieved only with the help of possible transfer of the financial resources.

Advantages:  
• It reduces the cost of investment in the public sector.

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Financial managers produce financial reports about investment activities, and develop strategic and financial plans for the long term financial goals of their organizations.

### Responsibilities of Financial Managers:

- Estimation of financial requirements
- Allocation of funds
- Budget preparation
- The role of the firm in its growth capacity
- Status of assets, liabilities, and debt
- Needs for capital financing
- Understanding capital markets

### Functions of Financial Managers:

Financial managers play an important role in the management of a business organization, as a manager will activities related to the firm. There are many functions that a financial manager is expected to perform. These include:

- Estimating the amount of capital requirement for the purpose functioning of the business
- Deciding a capital structure
- Finance to raise funds
- Allocation of funds
- Identifying funds

### Financial planning:

It is an important function of financial management.

This function starts as performance criteria for business as they are set.

Financially, a manager will set out existing business and perform this function using appropriate financial ratios and financial analysis. This involves identifying the financial and operational indicators of funds.

A carefully prepared financial plan will set out where the business will implement management of funds over their program, which is also.

According to earlier and through, it financial planning refers to the function of financial and includes the determination of the firm financial objectives, program, and policies and financial procedures.

### Types of financial planning:

- Short term planning
- Medium term financial planning
- Long term financial planning
- Operational planning
- Strategic financial objectives
- Financial objectives
- Financial procedures
- Financial flexibility

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SLACKING CAPITAL

Working capital

Working capital refers to that part of the firm's capital which is required for financing day to day operations in a high level of output.

Working capital is also referred to as circulating capital. It is the part of the firm's capital which is used for financing the day to day operations of the firm.

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Q. The kind of value :-

• Fixed Working Capital :-  
The part of working capital which is not consumed in the day to day operations of the firm. It is also known as long term assets. The value of it does not change over time.

• Net Working Capital :-  
It is a difference between current assets and current liabilities. It is the amount provided by the shareholders in the current form of the capitalization.

Q. The kind of firm :-

• Permanent Working Capital :-  
It is a part of working capital which is not consumed in the day to day operations of the firm. It is also known as long term assets. The value of it does not change over time.

• Current Working Capital :-  
It is a part of working capital which is consumed in the day to day operations of the firm. It is also known as short term assets. The value of it changes over time.

• Fixed Working Capital :-  
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### Importance of Working Capital Management

- Working capital is the lifeblood of a business.
- The use of funds is the key to success or failure.
- It is the difference between current assets and current liabilities.
- It is the fund which is available for the day to day operations of the business.
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- It is the fund which is available for the day to day operations of the business.
- It is the difference between current assets and current liabilities.

### Importance of Accounts Payable

- It is the amount of money which is due to the suppliers.
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price fluctuations & for adequate flow of capital in business.

Thus, adequate working capital can help to ensure the business smoothly runs out any financial problems and also help give the business a better image by reducing working capital problems, increasing the value of capital and creating environment of healthy

Characteristics of working capital:

- Must to be profitable through sufficient cash in circulation.
- Fundraising flexibility is important.
- There are 2 subtypes for working capital flexibility:
  - It tends to prefer production, but not having a working dividend in mind.
  - High level of liquidity and the working assets used always and increase.
  - It may lead to retention about cash and therefore liquidity of operations.

Investment of working capital:

- Investment of working capital may lead to problems in the business which should affect the overall functioning of an organisation.
- The firm is unable to take advantage of the opportunities to develop via product or adopt the introduction of product, technology, innovation via operations over.

→ A firm will lose its reputation when it is not in a position to honour its short term obligations.

- It becomes difficult for the firm to acquire favourable market situations.
- A company cannot avoid cash discount facilities in case of both sides.
- A company may have to borrow funds at higher rate for interest.
- It becomes impossible to utilize the fixed asset efficiently.
- A company will not be able to pay its dividends in time, hence, the overall image of a business is severely damaged in the face of market share.

Working capital:

The capital which is needed for the operation of business is called working capital.

- For the purchase of raw materials.
- Payment of cost of other expenses.
- Working capital is kept in the form of cash, stock, raw materials, inventory, etc.
- It is a kind of buffer bill maintenance.

Types of working capital:

- Fixed capital.
- Working capital.
- Nature of working capital.
- Strategy used.
- Credit policy.
- Financial Management.

\* Relating growth to expansion of business

\* Change in price level

\* Monetary Policy

\* Working Capital Cycle

\* Expansion of Inventory

\* Selling of Inventory

\* Sale of Inventory

\* Working Capital Requirement of a firm is directly influenced by the following business expansion:

Business	Employees	Business	Employees
1-4 (Retail)	1,455	5-9 (Retail)	1,455
10-14 (Retail)	2,150	15-19 (Retail)	2,150
20-24 (Retail)	1,72,050	25-29 (Retail)	1,72,050
30-34 (Retail)	1,42,2,045	35-39 (Retail)	1,42,2,045

\* Nature of Business:

Working Capital requirement depends upon the nature of business involved by the firm

Generally, various factors like business and working capital requirements are directly related to the nature of business expansion.

A large order also requires a large amount of stock of goods. But in the world of advanced science technology, credit has large amount.

\* Storage period:

From credit for buying the stock in store is called storage period.

The amount of working capital is explained by the storage period.

If storage period is higher, then should require more quantity of goods in store.

If the storage period is less, then more stock of goods would be held in store.

on credit - in progress.

\* Credit period:

The credit period is the number of days that a customer is allowed to hold before payment can be made. But a longer credit period results in a larger investment in receivables.

Longer credit period against more customers in advance and fewer more stock.

Long period is better. But, the firm should also pay for credit period to customer needs.

Along capital.

\* Storage of Inventory:

In a retail business, working capital is well spent on equipment, stock, inventory, etc. But during the time, the inventory is being sold, the firm should also be maintaining the stock period.

When the inventory is sold, the firm should also be maintaining the stock period.

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This is how measured in perfect in the  
form of your growth. In business which  
you get to in the source of capital require  
invest.

#### • Independent variables:

Health, technology, an symmetrical  
factor, ability of your investment, profit,  
export its cost price, cost of capital, interest  
rate. If the business is a product in  
future, more working capital is required  
which is in form of debt.

#### • Financial health:

#### • Business growth:

When interest of working capital is  
used to pay the operation cost of business.

#### • Change in price level:

Change in price level affects the  
working capital requirement.

#### • The price level will affect the price

In volatile price, amount of working capital

• There decrease in the price level require

the firm to a credit increasing the  
working capital of business.

#### • Financial Policy:

Financial policy is the set of guidelines

company use to obtain, financing of it

activity. It tells you how to structure

financial policy, how you should working capital.

The need for working capital can be  
said with the interest payments.  
If a firm cannot use profit and  
distribute then amount of working capital. It  
needs for working capital.

#### • Working Capital Cycle:

The working capital cycle starts in the  
amount of firm's debt for firm. The net  
current assets and current liabilities also  
cash.

When the working capital cycle open.

When a loop, it will measure through amount

of working capital.

But if working capital is short and  
will use for working capital.

#### • Operational efficiency:

If in the quantity to deliver products

quantity in it, capitalization the need  
of the firm.

Operational efficiency of a firm, when

used in the period and of working capital

• The working efficiency of the firm

starts in the amount of working capital

• The operational efficiency of such in

them can be found return for

working capital.

#### • Other factors:

• Government policy

• Organization policy

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- Monetary Policy
- Fiscal Policy of RBI

### Structure of Working Capital:

- Financing of Working Capital:
  - Short Term
  - Intermediate
  - Fixed Capital
  - Operating Cost of Capital
  - Source from Financing
- Financing of Short Term Working Capital:
  - Long Term Finance
  - Trade Credit
  - Hypothecation Credit
  - Short Term
  - Commercial Paper
  - Secured by Anticipated Receipts
  - Cash Credit
  - Overdraft

### 3. Financing Decision

#### Capital Structure:

Capital Structure refers to the combination of debt and equity which a company uses to finance its long term operations.

Capital Structure of a company refers to the composition of all capitalization and it includes all things from capital sources like loans, debentures, shares and bonds.

According to W.V. Astor and P.K. Jain's report on their capital structures on subsidiaries of IIT plus equity which indicates the shareholding pattern of firms.

#### Applying Capital Structure:

- Ratio of Structure
- The Source Capital
- Structure of Financing
- Capital Management
- Return on Capital
- Long Term
- Legal Authority
- History of work of the company
- Evolution Policy of the firm
- Cost of financing

Advantages:

Advantages refer to "any economic activity accomplishing purpose"

In Financial Management, the Advantages are:

1. Leverage is used to describe the financial policy to use funds or funds to increase the return on investment.

2. Income - Some companies at a 20% employment of the total assets provide for what the firm pays a profit of 10% or 20% per annum.

3. Debt - Income - Some companies use debt capital in the amount of 10% or 20% of the total assets. The firm is said to be levered.

4. Advantages - Income, 'equilibrium' or 'peace' - A firm is said to be levered if it has a high debt ratio.

5. Types of leverage

Types of leverage:

\* Operating leverage:

It is defined as the use of fixed operating costs to supply a change in profit which is a given change in sales.

Operating leverage =  $\frac{\text{Contribution}}{\text{Operating profit}}$

Example:  $\frac{100}{20} = 5$

Contribution = 100  
Operating profit = 20

Degree of Operating Leverage:

The contribution cost ratio is the ratio of fixed operating cost can be calculated by the degree of operating leverage.

Example:  $\frac{100}{20} = 5$  or 500%  
Contribution = 100  
Operating profit = 20

Characteristics of Operating Leverage:

- It is related to the cost side of the firm.
- It is directly related to the cost side of the firm.
- It is a measure of the firm's cost structure.
- It is a measure of the firm's cost structure.

\* Financial leverage:

The firm's ability to use fixed financial charges to increase the level of return on capital is called financial leverage. It is a measure of the firm's capital structure.

Example:  $\frac{100}{20} = 5$  or 500%

Contribution = 100  
Operating profit = 20

Degree of Financial Leverage:

It is defined as the ratio of fixed financial charges to the total amount of financing.

Example:  $\frac{100}{20} = 5$  or 500%

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all show effect of change in operating profits on earnings per share due to fixed financial leverage.

• Combined Leverage (Operating Leverage)  $\times$  Financial Leverage = Combined Leverage

Combined Leverage = Operating Leverage  $\times$  Financial Leverage



Degree of Combined Leverage  
 If increases the degree change in EBIT due to change in sales

$$DCL = \frac{EBIT}{EBIT - \text{Interest}} \times \frac{EBIT}{EBIT - \text{Interest} - \text{Dividends}}$$



Financial leverage calculated by EBIT/(EBIT - Interest)

EBIT = Earnings Before Interest and Taxes

Interest = Interest expense

EBIT - Interest = Earnings Before Taxes

EBIT / (EBIT - Interest) = Financial Leverage

EBIT = Earnings Before Interest and Taxes

Interest = Interest expense

EBIT - Interest = Earnings Before Taxes

• Debt for the year 20000  
 available to equity shareholders

• If EBIT increases to 20000, business required capital 20000 and equity subscription is 20000

• If EBIT increases to 30000, business required capital 30000 and equity subscription is 30000

• If EBIT increases to 40000, business required capital 40000 and equity subscription is 40000

• If EBIT increases to 50000, business required capital 50000 and equity subscription is 50000

• If EBIT increases to 60000, business required capital 60000 and equity subscription is 60000

• If EBIT increases to 70000, business required capital 70000 and equity subscription is 70000

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Optimum process selected is from process 1  
 Hence the feasible processes selected are  
 Equally then optimal structure of the process  
 cost and etc

Costs

Material	20000	20000
Labour	10000	10000
Overhead	10000	10000
Fixed cost	10000	10000

What is the calculation of ETC?

Material	10000	10000
Labour	10000	10000
Overhead	10000	10000
Fixed cost	10000	10000

Q.1) ETC = 2 units. No. of kg. amount. 10000, fixed cost = 10000  
 ETC = 2 units. No. of kg. amount. 10000, fixed cost = 10000  
 No. of kg. amount = 10000  
 No. of kg. amount = 10000

ETC - ENERGY

No. of units amount	10000	225 per unit
ETC - ENERGY	10000	225 per unit

Q.1) The following table of a business concern is available. It shows that the cost of raw material is 10000, labour is 10000, overhead is 10000, and fixed cost is 10000.

Material	10000
Labour	10000
Overhead	10000
Fixed cost	10000

Q.2) From the following table, calculate the average cost of a unit.

Material	10000
Labour	10000
Overhead	10000
Fixed cost	10000

Q.3) Calculate the average cost per unit. The following table shows the cost of raw material, labour, overhead, and fixed cost.

Material	10000
Labour	10000
Overhead	10000
Fixed cost	10000



17) Calculate the operating leverage and leverage ratios from the following data:

Units produced 100,000 units  
 Sales price per unit 100  
 Variable cost per unit 70  
 Fixed cost per unit 10  
 Interest expense 100,000

18) Determine the types of leverage from the following data:

Sales price per unit 100  
 Variable cost per unit 70  
 Fixed cost per unit 10  
 Interest expense 100,000

19) The following data are available for the year 2019:

Units produced 100,000  
 Sales price per unit 100  
 Variable cost per unit 70  
 Fixed cost per unit 10  
 Interest expense 100,000

(a) Leverage ratios  
 (b) Leverage ratios  
 (c) Leverage ratios

(d) Operating leverage  
 (e) Leverage ratios  
 (f) Leverage ratios

20) The following data are available for the year 2019:

21) The following data are available for the year 2019:

Units produced 100,000  
 Sales price per unit 100  
 Variable cost per unit 70  
 Fixed cost per unit 10  
 Interest expense 100,000

(a) Leverage ratios  
 (b) Leverage ratios  
 (c) Leverage ratios

(d) Operating leverage  
 (e) Leverage ratios  
 (f) Leverage ratios

22) The following data are available for the year 2019:

Units produced 100,000  
 Sales price per unit 100  
 Variable cost per unit 70  
 Fixed cost per unit 10  
 Interest expense 100,000

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14) The Return Rate of a company is as under

Equity	1000000	10%	100000
Debt	2000000	12%	240000
WACC			140000

The company had such transactions as follows. It had 100000 shares of Rs. 10 each and 2000000 debt of 12% interest. The debt is not subject to any of leverage.

What calculation of EBIT

EBIT	140000
Interest	240000
EBT	400000
Dividend	100000
EBT	300000
Dividend	100000
EBT	200000
Dividend	100000
EBT	100000
Dividend	100000
EBT	0

What calculation of Return on Equity

$$ROE = \frac{EBIT}{\text{Equity}} = \frac{140000}{1000000} = 14\%$$

What calculation of EBIT

EBIT	140000
Interest	240000
EBT	400000
Dividend	100000
EBT	300000
Dividend	100000
EBT	200000
Dividend	100000
EBT	100000
Dividend	100000
EBT	0

Calculation of EBIT

$$EBIT = \frac{\text{Interest}}{\text{Rate}} = \frac{240000}{12\%} = 2000000$$

What calculation of EBIT

EBIT	140000
Interest	240000
EBT	400000
Dividend	100000
EBT	300000
Dividend	100000
EBT	200000
Dividend	100000
EBT	100000
Dividend	100000
EBT	0

1) Calculation of EBIT and EBT

particulars	300000
EBT	400000
EBIT	100000
EBIT	100000
EBIT	100000
EBIT	100000

Calculation of DE  
 DE = Subsidies  
 DE = EBIT - Interest  
 DE = 100000 - 100000 = 0

2) Calculation of EBIT and EBT

particulars	100000
EBT	100000
EBIT	100000
EBIT	100000
EBIT	100000

Calculation of DE  
 DE = Subsidies  
 DE = EBIT - Interest  
 DE = 100000 - 100000 = 0

10) Calculation of EBIT and EBT

particulars	100000
EBT	100000
EBIT	100000
EBIT	100000
EBIT	100000

Calculation of DE  
 DE = Subsidies  
 DE = EBIT - Interest  
 DE = 100000 - 100000 = 0

11) Calculation of EBIT and EBT

particulars	100000
EBT	100000
EBIT	100000
EBIT	100000
EBIT	100000

Calculation of DE  
 DE = Subsidies  
 DE = EBIT - Interest  
 DE = 100000 - 100000 = 0

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September 11, 11  
 P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

Calculation of EBT  
 P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
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P2 = EBIT = 1000000 - 1000000 = 0  
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P2 = EBIT = 1000000 - 1000000 = 0  
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P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

P2 = EBIT = 1000000 - 1000000 = 0  
 EBT = 1000000

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14/11/19 Particulars

Fixed Cost

Variable Cost

Contribution

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

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EBIT

EBIT

EBIT

EBIT

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EBIT

EBIT

EBIT

EBIT

Page No. Date

$C = 2.37 \times 1.5$

$CL = 3.555 \text{ Lacs}$

19) The full data are available for volume 240000. Hence price per unit is 12. Variable cost per unit is 7.20, total fixed cost 7500000. What is the operating leverage when volume 240000 produce 1200 units.

\* What is the % change will occur in EBIT if volume 240000 is set up increase by 5%.

20) Calculate the F.V. P.O.L under situation 1 & 2. Financial plan 1: 12 units per hour. The following relating to the operation & resource consumption of the 240000 production & sales 200 units. Selling price per unit 120. Variable cost per unit 75. Find out contribution.

11/15/20

Particulars

Fixed Cost

Variable Cost

Contribution

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

EBIT

Cost of unit @ 10

Equity capital

Debt

Cost of debt @ 10

Equity capital

Debt

Cost of debt @ 10

Equity capital

Debt

Cost of debt @ 10

Equity capital

Debt

Cost of debt @ 10

Equity capital

1) Determine the EBIT for Company which has operating profit of 1000000. It capital structure consists of the following:-

- Bonds: 10,00,000
- 11% preference shares: 1,00,00,000
- Equity shares of Rs 10 each: 1,00,00,000

- The company is in the 35% slab
- Determine the degree of financial leverage in the firm
- Determine the percentage change in EBIT associated with 30% increase in EBIT
- Determine the degree of financial leverage

2) The capital structure of ABC Ltd consists of an ordinary share capital of 2000000 (Rs per share) and 200000 of 10% preference shares owned by 20000. The following items by EBIT and payable and unit in 2017 are as follows: EBIT 1000000 and 1200000.

- You are required to calculate the following:-
- The degree of financial leverage & provide brief benefits of leverage & financial risk
- The % of increase in EBIT
- Operating as the effectiveness of operating & financial leverage in relation to margin of production from given the above with

23) Calculate the degree of operating leverage, financial leverage & combined leverage for the following:-

particulars	A	B	C
Capital (₹1000)	100000	33000	10000
Fixed cost (₹100)	10000	10000	10000
Variable cost (₹100000)	100000	33000	10000
Interest expense (₹100)	10000	33000	10000
Dividend preference (₹100)	10000	33000	10000

2) A Company has EBIT of 1000000. It has capital structure consists of the following:-

- Equity shares Capital (₹10 each): 1000000
- 10% preference shares Capital: 1000000
- 15% debentures: 1000000

The company is facing fluctuation in its EBIT what would be the change in EBIT if EBIT of the company is increased by 30% & EBIT of the company is decreased by 25%.

3) ABC Ltd is a registered with 2000000 units of 10% bonds equity shares of the amount of 10000000. The company has received the following information:-

- The company is facing fluctuation in its EBIT what would be the change in EBIT if EBIT of the company is increased by 30% & EBIT of the company is decreased by 25%.
- You are required to calculate EBIT of the company.
- The company is facing fluctuation in its EBIT what would be the change in EBIT if EBIT of the company is increased by 30% & EBIT of the company is decreased by 25%.
- You are required to calculate EBIT of the company.

EBIT is = 24,000 + 2,000,000

- 20) If Co. paid capital of 2,000,000 dollars with 300,000 shares. It has major expenses for acquiring an asset worth of 2,000,000 dollars that average about 10% per year. The following are shown with a 10% rate:
- Value of stock = 300,000 shares x 10% = 30,000
  - Value of 10% preferred = 2,000,000 x 10% = 200,000
- The 10% preferred owners will not contribute the rest of cost of about 1,700,000 of financing. So, the remaining per share is 1,700,000 / 300,000 = 5.67 dollars to be used for other expenses.
- EBIT covered by 2,000,000
  - Assume the liability is 50%

21) The Toronto Ltd needs 50,000 shares for new facilities. It has two plans:

- The Co. financial plan is to issue 50,000 shares at 50¢ per share.
- The Co. may issue 25,000 shares at 200¢ each and 25,000 shares at 100¢ each at 10% interest.
- The Co. may issue 25,000 shares at 200¢ each and 25,000 shares at 100¢ each at 10% interest.

at 200¢ per share, leaving 25,000 shares of stock. If the Co. EBIT was 10,000,000, the 25,000 shares and 25,000 shares of EBIT would cost of the financial plan, which alternative would be recommended and why? Assume corporate tax to be 50%.

22) If Company needs 300,000 shares for construction of a new plant. The following financial plan is feasible:

- Company may issue 100,000 shares of 50¢ per share.
  - The company may issue 200,000 shares of 200¢ per share.
  - The company may issue 300,000 shares of 100¢ per share.
  - The company may issue 300,000 shares of 200¢ per share.
- The company may issue 300,000 shares of 100¢ per share and 5,000 shares of 200¢ per share. The rest of interest of 100,000 shares of 200¢ per share would be used for other expenses.

If the Co. EBIT was 10,000,000, the 300,000 shares of 100¢ per share and 5,000 shares of 200¢ per share would be used for other expenses. The rest of interest of 100,000 shares of 200¢ per share would be used for other expenses.

23) The Co. needs 100,000 shares for new facilities. It has two plans:

- The Co. may issue 100,000 shares at 100¢ each.
- The Co. may issue 50,000 shares at 200¢ each and 50,000 shares at 100¢ each at 10% interest.

\* 21 lakh equity share and 2 lakh debt at 10% PA

\* All debt at 10% PA

\* 21 lakh equity share and 2 lakh debt at 10% PA

\* Preference share capital at 10% dividend

The share capital is 100 lakh

By corporate tax at 30% + dividend

EBIT is 100 lakh

Question: (a) Compute?

(i) EBIT of a company

When in case of 1 lakh

being the same, the degree of

leverage is more

\* CF - If the dividend is 10%

is higher than the CF, then

share will be high as compared

to 1 lakh

12) Statement showing the

different situations:

Table given with X1, X2

(i) Variable Cost

(ii) Fixed Cost

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

13) Table: Debt and interest & total assets

Table with 2 columns: Debt, Assets

(i) Variable Cost

(ii) Fixed Cost

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

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Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT

Table with EBIT, EBT, EAT



EBIT at 12000 units - EBIT at 12000 units

EBIT at 12000 units  
 230,000 - 200,000 = 30,000

EBIT at 12000 units  
 230,000 - 200,000 = 30,000

DL =  $\frac{C}{EBIT} = \frac{100,000}{200,000} = 0.5$

Calculation of DL

Particulars	DL	DL
COVC	1.25	1.1
CO F.C.	1.00	1.00
CO Interest	1.00	1.00
FL = $\frac{EBIT}{EBT}$	1.25	1.1

Calculation of EBIT

Particulars	EBIT	EBIT
COVC	120,000	120,000
CO F.C.	100,000	100,000
CO Interest	100,000	100,000
FL = $\frac{EBIT}{EBT}$	1.25	1.1

Particulars - B) Particulars

Particulars	EBIT	EBIT
COVC	120,000	120,000
CO F.C.	100,000	100,000
CO Interest	100,000	100,000
FL = $\frac{EBIT}{EBT}$	1.25	1.1

Calculation of EBIT

Particulars	EBIT	EBIT
COVC	120,000	120,000
CO F.C.	100,000	100,000
CO Interest	100,000	100,000
FL = $\frac{EBIT}{EBT}$	1.25	1.1

Calculation of EBIT

Particulars	EBIT	EBIT
COVC	120,000	120,000
CO F.C.	100,000	100,000
CO Interest	100,000	100,000
FL = $\frac{EBIT}{EBT}$	1.25	1.1

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2042 1000

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• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• The DE of (degree) will be high than the DE of (degree) with the degree of DE spread. It is lower in the DE of (degree) with the DE of (degree) with a higher DE. The DE of (degree) with (degree) will give all higher rate as compared to (degree) with (degree).

• The DE of (degree) with (degree) will give all higher rate as compared to (degree) with (degree).

13) Calculation of 1 share price

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
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• Degree of  $\frac{1}{2}$  down EBIT  
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• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
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• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

• Degree of  $\frac{1}{2}$  down EBIT  
 200000  
 100000

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(a) P.O. (Laminated)

BRILLI	22000	22000	22000
EP1	145150	215350	215350
145350	10000	10000	10000
10000	284	284	284
284	559	559	559

per sheet per sheet per sheet

to allow in the index of EP1

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

change in EP1 by 20% of EP1

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 - 20000 sheets

EP1	145150	215350	215350
145350	10000	10000	10000
10000	284	284	284
284	559	559	559

per sheet per sheet per sheet

to allow in the index of EP1

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

change in EP1 by 20% of EP1

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

EP1 @ 100 sheets - 10000 sheets

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FP-10  
 Co: Individual  
 Amount

FP-11 = 10000  
 Profit: 20000  
 Co: Joint

FP-12 = 10000  
 Profit: 20000  
 Co: Joint

FP-13 = 10000  
 Profit: 20000  
 Co: Joint

FP-14 = 10000  
 Profit: 20000  
 Co: Joint

FP-15 = 10000  
 Profit: 20000  
 Co: Joint

FP-16 = 10000  
 Profit: 20000  
 Co: Joint

FP-17 = 10000  
 Profit: 20000  
 Co: Joint

FP-18 = 10000  
 Profit: 20000  
 Co: Joint

FP-19 = 10000  
 Profit: 20000  
 Co: Joint

FP-20 = 10000  
 Profit: 20000  
 Co: Joint

FP-21 = 10000  
 Profit: 20000  
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FP-22 = 10000  
 Profit: 20000  
 Co: Joint

FP-23 = 10000  
 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
 Co: Joint

FP-30 = 10000  
 Profit: 20000  
 Co: Joint

FP-31 = 10000  
 Profit: 20000  
 Co: Joint

FP-32 = 10000  
 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
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 Profit: 20000  
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FP-36 = 10000  
 Profit: 20000  
 Co: Joint

FP-37 = 10000  
 Profit: 20000  
 Co: Joint

FP-38 = 10000  
 Profit: 20000  
 Co: Joint

FP-39 = 10000  
 Profit: 20000  
 Co: Joint

FP-40 = 10000  
 Profit: 20000  
 Co: Joint

(1) **FP-20**      **FP-21**      **FP-22**      **FP-23**      **FP-24**  
 (2) **FP-25**      **FP-26**      **FP-27**      **FP-28**      **FP-29**

(3) **FP-30**      **FP-31**      **FP-32**      **FP-33**      **FP-34**

(4) **FP-35**      **FP-36**      **FP-37**      **FP-38**      **FP-39**

(5) **FP-40**      **FP-41**      **FP-42**      **FP-43**      **FP-44**

(6) **FP-45**      **FP-46**      **FP-47**      **FP-48**      **FP-49**

(7) **FP-50**      **FP-51**      **FP-52**      **FP-53**      **FP-54**

(8) **FP-55**      **FP-56**      **FP-57**      **FP-58**      **FP-59**

(9) **FP-60**      **FP-61**      **FP-62**      **FP-63**      **FP-64**

(10) **FP-65**      **FP-66**      **FP-67**      **FP-68**      **FP-69**

(11) **FP-70**      **FP-71**      **FP-72**      **FP-73**      **FP-74**

(12) **FP-75**      **FP-76**      **FP-77**      **FP-78**      **FP-79**

(13) **FP-80**      **FP-81**      **FP-82**      **FP-83**      **FP-84**

(14) **FP-85**      **FP-86**      **FP-87**      **FP-88**      **FP-89**

(15) **FP-90**      **FP-91**      **FP-92**      **FP-93**      **FP-94**

(16) **FP-95**      **FP-96**      **FP-97**      **FP-98**      **FP-99**

(17) **FP-100**      **FP-101**      **FP-102**      **FP-103**      **FP-104**

(18) **FP-105**      **FP-106**      **FP-107**      **FP-108**      **FP-109**

(19) **FP-110**      **FP-111**      **FP-112**      **FP-113**      **FP-114**

(20) **FP-115**      **FP-116**      **FP-117**      **FP-118**      **FP-119**

(21) **FP-120**      **FP-121**      **FP-122**      **FP-123**      **FP-124**

(22) **FP-125**      **FP-126**      **FP-127**      **FP-128**      **FP-129**

(23) **FP-130**      **FP-131**      **FP-132**      **FP-133**      **FP-134**

(24) **FP-135**      **FP-136**      **FP-137**      **FP-138**      **FP-139**

(25) **FP-140**      **FP-141**      **FP-142**      **FP-143**      **FP-144**

(26) **FP-145**      **FP-146**      **FP-147**      **FP-148**      **FP-149**

(27) **FP-150**      **FP-151**      **FP-152**      **FP-153**      **FP-154**

(28) **FP-155**      **FP-156**      **FP-157**      **FP-158**      **FP-159**

(29) **FP-160**      **FP-161**      **FP-162**      **FP-163**      **FP-164**

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(31) **FP-170**      **FP-171**      **FP-172**      **FP-173**      **FP-174**

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(40) **FP-215**      **FP-216**      **FP-217**      **FP-218**      **FP-219**

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(57) **FP-300**      **FP-301**      **FP-302**      **FP-303**      **FP-304**

(58) **FP-305**      **FP-306**      **FP-307**      **FP-308**      **FP-309**

(59) **FP-310**      **FP-311**      **FP-312**      **FP-313**      **FP-314**

(60) **FP-315**      **FP-316**      **FP-317**      **FP-318**      **FP-319**

(61) **FP-320**      **FP-321**      **FP-322**      **FP-323**      **FP-324**

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(66) **FP-345**      **FP-346**      **FP-347**      **FP-348**      **FP-349**

(67) **FP-350**      **FP-351**      **FP-352**      **FP-353**      **FP-354**

(68) **FP-355**      **FP-356**      **FP-357**      **FP-358**      **FP-359**

(69) **FP-360**      **FP-361**      **FP-362**      **FP-363**      **FP-364**

(70) **FP-365**      **FP-366**      **FP-367**      **FP-368**      **FP-369**

(71) **FP-370**      **FP-371**      **FP-372**      **FP-373**      **FP-374**

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Key terms define

### Notion of Capital Budgeting:-

- An effective Capital Budgeting process should form the strategic component of a sound investment policy.
- It will improve public financial management system especially with aspects of the system involving:
  - Cost budgeting, investment, and capital expenditure.
  - Budgeting for investment financing and capital expenditure.
  - Budgeting for investment financing and capital expenditure.
  - Budgeting for investment financing and capital expenditure.

### Significance of Capital Budgeting:-

- **Actual forecast of sales:-**  
The investment in plant and equipment is a long term investment. It is a long term investment. It is a long term investment. It is a long term investment.
- **Investment in plant and equipment:-**  
Investment in plant and equipment is a long term investment. It is a long term investment. It is a long term investment. It is a long term investment.
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Investment in plant and equipment is a long term investment. It is a long term investment. It is a long term investment. It is a long term investment.

• So as to make the best possible investment in the expenditure of assets.

• **Timing of asset acquisition:-**  
Proper timing of asset acquisition is vital. It is a long term investment. It is a long term investment.

• **Cost-benefit:-**  
Capital investment requires substantial funds which can only be managed by making systematic efforts to secure the best investment of the right time.

• **Health maintenance of investment:-**  
The aspect of investment capital expenditure is in making it productive. The return of investment and investment return is in making it productive. The return of investment and investment return is in making it productive.

### Capital Budgeting process:-

- It is a long term investment. It is a long term investment. It is a long term investment. It is a long term investment.
- It is a long term investment. It is a long term investment. It is a long term investment. It is a long term investment.
- It is a long term investment. It is a long term investment. It is a long term investment. It is a long term investment.

Step 1: Identifying the problem. The proposal:

The planning committee will give the various proposals and determine the budget available on a national scale. The number of projects of the economic

Step 2: Evaluation. The proposal is evaluated with the various criteria. The cost of the project, the benefits, the risks, the time required, the resources available, the impact on the environment, the social and economic benefits, the political and public opinion, the international relations, the legal and ethical aspects, the administrative and financial aspects, the technical and scientific aspects, the social and cultural aspects, the political and public opinion, the international relations, the legal and ethical aspects, the administrative and financial aspects, the technical and scientific aspects, the social and cultural aspects.

Step 3: Final approval. The various proposals are ranked according to the criteria and the most promising ones are selected for funding.

Step 4: Implementation. The selected projects are implemented according to the approved budget and the project is monitored and evaluated.

Step 5: Evaluation. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 6: Monitoring and evaluation. The project is monitored and evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 7: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 8: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 9: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 10: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 11: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 12: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

Step 13: Final report. The project is evaluated according to the criteria and the results are reported to the planning committee. The project is then either approved or rejected for funding.

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Amount on right side of eqn = cost of work done  
 how soon the payments must pay back the cost  
 would be expected if not would be expected in

Payback Rate of Return

The useful table lists the payback expected from investment seen in table 10. Also the method of allowing company project to be written than cash inflow. The project with shorter payback rate of return is attached as superior to the  
 • cost lower, return  
 EBIT, company  
 exp. investment  
 exp. investment  
 exp. investment  
 exp. investment

Calculation of payback rate of return

1. Net investment  
 2. Annual cash inflow

• When cash inflow is considered, that use additional capital? - payback rate of return  
 • When cash inflow is considered, that use additional capital? - payback rate of return

Advantages of payback + discounted payback

The method is simple to calculate and easy to apply. It also the value change of project in calculating rate of return.

Advantages of NPV

• It provides a better means of comparison of project than the payback rate of return. It also allows the value of money to be taken into account.  
 • It provides a better means of comparison of project than the payback rate of return. It also allows the value of money to be taken into account.

Disadvantages of NPV

• It is more difficult to calculate than payback rate of return. It also allows the value of money to be taken into account.  
 • It is more difficult to calculate than payback rate of return. It also allows the value of money to be taken into account.  
 • It is more difficult to calculate than payback rate of return. It also allows the value of money to be taken into account.

Advantages of PFI:

- It is better suit a early construction
  - It focuses capital projects that will long term cost flows
  - It allows lowest payments. In capital risk by sharing the risk at it level of design and construction
  - It reduces the risk of cost overruns
  - The use of well reputation. Present characteristics of the budgeting details which enhance the quality of the project about meeting the project goals
  - It contains a built in risk and reward side and uncertainty in the project. The payback for both the side
- Disadvantages:
- It ignores any benefits that occur in payback period. It does not measure the benefits that occur later in the project.
  - It is difficult to distinguish the projects of different risk when cost is not so clearly defined.
  - It does not emphasize about the profitability.

- 1) A project needs a total investment of ₹ 10 lakh. The project provides a total cash inflow of ₹ 20000 per year for 10 years.  
Complete payback period.
  - 2) A project requires an initial investment of ₹ 10,000 as an annual cash inflow of ₹ 10000 per year for 2 years. What is a payback period of
  - 3) A project requires ₹ 25 lakh as initial investment and it will generate an annual cash inflow of ₹ 10 lakh for 2 years. Calculate the payback period.
- We know that the consistency & observability weakness. It involves both the total cash inflow and the total cash inflow from the investment to ₹ 10 lakh. The investment cost is ₹ 10 lakh and its estimated cash inflow is ₹ 10000 per year. Both methods estimate the payback period. The result with the payback period is being payback period.
- 1) A project costs ₹ 10 lakh. Its annually project inflow after depreciation is ₹ 12000 per year. What is the payback period of the project?
  - 2) From the given below, calculate payback period.
- Depreciation cost of investment ₹ 10 lakh.

Annual cash inflow after tax = 250,000 - 100,000 = 150,000

1) Cost of plant is 1,000,000 and cash flows for the next 5 years are 250,000, 200,000, 150,000, 100,000, 50,000. If you invest the plant, the present value of cash flows is:

At 10% discount rate, the present value of cash flows is 1,000,000. The cash flow for the project which cost 1,000,000 is 1,000,000. The cash flow for 2 years, 200,000, 150,000, 100,000, 50,000. Calculated pay back.

2) A company is considering investing in a project, which cost 200,000. The cash flows are 25,000, 30,000, 35,000, 40,000, 45,000, 50,000. Calculate pay back period.

100,000 - 100,000 = 0. It is equivalent to the project purchase price. Machinery, 200,000. Depreciation, 40,000. Cash flow, 25,000. Cash flow, 30,000. Cash flow, 35,000. Cash flow, 40,000. Cash flow, 45,000. Cash flow, 50,000. Calculate pay back period.

Year	Machine 'S'	Machine 'T'
1st	4,00,000	1,00,000
2nd	2,00,000	4,00,000
3rd	2,10,000	2,00,000
4th	1,00,000	4,00,000
5th	1,00,000	2,00,000

As this method is based upon giving weights of profit, it can be readily calculated from financial data. However, this method ignores the time value of money as the profits received are not weighted by giving the profit 7% greater each year which the more is present than of any profit.

It cannot be applied to a situation where investment in a project has to be made in parts.

1) Payback period: Desired investment = 1,00,000. Annual cash inflow = 20,000. P.B.P = 5 years.

2) Payback period: Desired investment = 1,00,000. Annual cash inflow = 20,000. P.B.P = 5 years.

3) Payback period: Desired investment = 1,00,000. Annual cash inflow = 20,000. P.B.P = 5 years.

P.B.P = 5 years

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Q18) pay back period - original investment

Machine 1 150000 2 years

Machine 2 100000 3 years & variable

Request/Assessment:

Machine 1 is preferred, because its payback period is less than Machine 2.

Q18)

Annual profit after depreciation

Machine 1: 150000 / 2 = 75000  
Machine 2: 100000 / 3 = 33333

Payback period = original investment / annual profit

Machine 1: 150000 / 75000 = 2 years

Machine 2: 100000 / 33333 = 3 years

Q19)

Annual cash inflows = 100000

Initial cost = 500000

payback period - original investment

500000

100000

P.B.P = 5 years

accumulative cash flows?

pay back period is usually expressed in years - start by calculating net cash flow for each year, then accumulate by year until cumulative cash flow is a positive number.

that year is pay back period.

pay back period = years before full recovery of original investment + first still to recover

Next year cash inflows

Year 1: 100000

Year 2: 100000

Year 3: 100000

Year 4: 100000

Year 5: 100000



Yearly Example: Investment Cash flow

1	10000	10000
2	10000	14000
3	10000	16000
4	10000	18000
5	10000	20000

pay back period: Yearly full recovery of original investment + first year of success  
 Meet your goal

1 year + 10000  
 2 years + 10000  
 3 years + 10000  
 4 years + 10000  
 5 years + 10000

pay back period: Yearly full recovery of original investment + first year of success

1	10000	10000
2	10000	14000
3	10000	16000
4	10000	18000
5	10000	20000

pay back period: Yearly full recovery of original investment + first year of success

1 year + 10000  
 2 years + 10000  
 3 years + 10000  
 4 years + 10000  
 5 years + 10000

pay back period: Yearly full recovery of original investment + first year of success

Year	Investment	Revenue
1	10000	10000
2	10000	14000
3	10000	16000
4	10000	18000
5	10000	20000

pay back period: Yearly full recovery of original investment + first year of success

1	10000	10000
2	10000	14000
3	10000	16000
4	10000	18000
5	10000	20000

pay back period: Yearly full recovery of original investment + first year of success

1 year + 10000  
 2 years + 10000  
 3 years + 10000  
 4 years + 10000  
 5 years + 10000

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4. Mutual investment 2% share Company  
 1000000 shares of 5 paise each  
 1000000 / 5 = 200000000

Ans: 200000000  
 1000000 / 5 = 200000000

Ans: 200000000  
 1000000 / 5 = 200000000

Q1: 200000000

Ans: 200000000  
 1000000 / 5 = 200000000

Ans: 200000000  
 1000000 / 5 = 200000000

Ans: 200000000  
 1000000 / 5 = 200000000

Q1: 200000000  
 1000000 / 5 = 200000000

Ans: 200000000  
 1000000 / 5 = 200000000

Q1: 200000000  
 1000000 / 5 = 200000000

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24/11/2020  
24/11/2020

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of the  
total project  
approach  
PBR - by  
by  
Adapted  
No. of  
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PER - 16.66  
PBR - 16.66  
PBR - 16.66

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21/11/21 Calculation of NPV

Year	Revenue	Expenses	Net Cash Flow
0	0	10000	-10000
1	15000	4000	11000
2	18000	4000	14000
3	20000	4000	16000
4	22000	4000	18000
5	24000	4000	20000
6	26000	4000	22000
7	28000	4000	24000
8	30000	4000	26000
9	32000	4000	28000
10	34000	4000	30000

NPV =  $\sum \frac{CF_t}{(1+r)^t}$

IRR = 20.1%

22/11/21

Year	Revenue	Expenses	Net Cash Flow
0	0	10000	-10000
1	15000	4000	11000
2	18000	4000	14000
3	20000	4000	16000
4	22000	4000	18000
5	24000	4000	20000
6	26000	4000	22000
7	28000	4000	24000
8	30000	4000	26000
9	32000	4000	28000
10	34000	4000	30000

Capital rationing refers to the condition where the firm is not in a position to invest in all profitable projects due to the constraints or availability of funds.

Problem no. 100, 101, 102, 103, 104, 105, 106, 107, 108

1. A firm has a budget of 100000 and is considering 3 mutually exclusive projects X, Y & Z. The details are given below.

Year	Project X	Project Y
0	100000	100000
1	15000	20000
2	20000	30000
3	25000	40000
4	30000	50000
5	35000	60000

1. Initially calculate payback for projects X, Y & Z.

Project	Year	Investment	Revenue	Net Cash Flow
Project X	0	100000	0	-100000
	1	0	15000	15000
	2	0	20000	20000
	3	0	25000	25000
	4	0	30000	30000
	5	0	35000	35000
Project Y	0	100000	0	-100000
	1	0	20000	20000
	2	0	30000	30000
	3	0	40000	40000
	4	0	50000	50000
	5	0	60000	60000

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Q14

Assuming the sale to be 50% straight line depreciation of the part alternative using the part alternative as follows:

Year	1	2	3	4	5
Part A	1000	1000	1000	1000	1000
Part B	1000	1000	1000	1000	1000
Total	2000	2000	2000	2000	2000

25. Calculate the payback period of the investment.

Year	1	2	3	4	5
Part A	1000	1000	1000	1000	1000
Part B	1000	1000	1000	1000	1000
Total	2000	2000	2000	2000	2000

If the required rate of return is 10% which project should be undertaken?

Day  
Date  
Page  
Topic  
Date

Year	1	2	3	4	5
Part A	1000	1000	1000	1000	1000
Part B	1000	1000	1000	1000	1000
Total	2000	2000	2000	2000	2000

Calculation of payback period of the investment.

Year	1	2	3	4	5
Part A	1000	1000	1000	1000	1000
Part B	1000	1000	1000	1000	1000
Total	2000	2000	2000	2000	2000

Calculation of NPV

Year	1	2	3	4	5
Part A	1000	1000	1000	1000	1000
Part B	1000	1000	1000	1000	1000
Total	2000	2000	2000	2000	2000

$$NPV = \frac{1000}{1.1} + \frac{1000}{1.1^2} + \frac{1000}{1.1^3} + \frac{1000}{1.1^4} + \frac{1000}{1.1^5} - 10000$$

$$NPV = 34522.5$$

$$NPV = 34522.5$$

2.  $50000 - 10000 = 40000$

3.  $20000$

RRP =  $\frac{20000}{40000} = 0.5$

RRP =  $\frac{20000}{40000} = 0.5$

4.  $50000 - 10000 = 40000$

2.  $20000 - 10000 = 10000$

RRP =  $\frac{10000}{40000} = 0.25$

RRP =  $\frac{10000}{40000} = 0.25$

RRP	RRP	RRP	RRP
0.5	0.5	0.5	0.5
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25

RRP =  $\frac{10000}{40000} = 0.25$

Calculation of depreciation

RRP =  $\frac{10000}{40000} = 0.25$

RRP =  $\frac{10000}{40000} = 0.25$

RRP =  $\frac{10000}{40000} = 0.25$

RRP	RRP	RRP	RRP
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25

RRP =  $\frac{10000}{40000} = 0.25$

RRP =  $\frac{10000}{40000} = 0.25$

RRP	RRP	RRP	RRP
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25

RRP =  $\frac{10000}{40000} = 0.25$

$$P^1 = \frac{100000 - 100000}{1} = 0$$

NPV = 0

NPV = 100000 - 100000 = 0

$$P^1 = \frac{100000 - 100000}{1} = 0$$

NPV = 0

Calculation of NPV:

$$P^1 = \frac{100000 - 100000}{1} = 0$$

$$P^1 = \frac{100000 - 100000}{1} = 0$$

Answer:

Project 'B' should be selected as it has a higher NPV.

NPV Present Value Method.

The net present value is obtained on the difference between present value of the cash inflows & the present value of cash outflows.

Project with positive NPV is acceptable & profitable.

The NPV is computed as follows:

- NPV = Present value of cash inflows - Present value of cash outflows.

Note: When NPV is zero, the project is at the break-even point. The specific decision rules for NPV in an investment:

- NPV > 0, accept project.
- NPV = 0, accept project.
- NPV < 0, investment is unprofitable.

Advantages of NPV:

- Considers the time value of money.
- Considers cash inflows of every period.
- Evaluation of present value of their cash flows based on a discounting rate = cost of capital.
- It is convenient to be comparatively superior to other methods.
- It reveals errors any percent in the project life or any rate flows.
- Consistent with the objectives of maximizing the value of a firm.
- It is easy to apply NPV than IRR.

Disadvantages of NPV:

- It is a hard to discount with the present value. It is very tough to find out the discount rate. The accurate weight of cost of capital.
- It is difficult to compare the magnitude of initial and final cash flows together.
- May not be suitable in cases of alternative project costs having unequal lives.
- It is a time-consuming method.

- Eliminates firm component
- Result is investment decision, since add value

4) 3 yrs duration, 10% growth, cost of capital is 12% and PV of 1 is needed after 2 yrs what is present value

$$PV = \frac{1}{(1+12\%)^2} = \frac{1}{1.2544} = 0.7971$$

5) Calculate total present value of investment if discount factor is 12% find of investment if income = 10000, 2 yrs = 40000, end of 2nd = 40000

Calculation of total present value

Year	Cash inflow	Discount factor	PV of cashflow
1	10000	0.893	8930
2	50000	0.797	39850
2nd	40000	0.718	28720

Total present value = 87950

1)  $PV = \frac{10000}{(1+12\%)^1} = 8930$

2)  $PV = \frac{50000}{(1+12\%)^2} = 39850$

3)  $PV = \frac{40000}{(1+12\%)^2} = 28720$

6) Compare NPV of project which requires one initial investment of 200000 and which involves a net cash inflow of 20000 and 30000 for 1st and 2nd year respectively. Assume a cost of funds is 10% and a life of 2 yrs for both at 10% p.a.

NPV = 221,500 - 200,000 = 21,500

NPV

Year	Cash inflow	Discount factor	NPV
1	20000	0.909	18180
2	30000	0.826	24780

7) firm has initial investment 200000 and cash inflow for 1st and 2nd year

Year	Cash inflow	Discount factor	PV factors @ 10%
1	100000	0.909	90900
2	100000	0.826	82600

Calculation of NPV

Year	Cash inflow	Discount factor	present value of cashflow
1	100000	0.909	90900
2	100000	0.826	82600
3	100000	0.751	75100
4	100000	0.676	67600

At the present value of - 100000  
 Cash inflows - 100000  
 NPV = 3150

From the above cash calculation, the net present value of the project is 3150. Hence, the project should be accepted because the NPV is positive.

**Particulars**      **Present Value**      **Project Value**  
 Initial investment      100000      -100000  
 Additional 1st year      30000      30000  
 2nd year      25000      25000  
 3rd year      20000      20000  
 4th year      15000      15000  
 5th year      10000      10000  
**Total**                **3150**

Q. Cash inflows & outflows of investment project are given below:  
 Year      Cash inflows      Cash outflows  
 1      10000      15000  
 2      20000      30000  
 3      30000      40000  
 4      40000      50000  
 5      50000      60000

4      Same  
 5      Same

The average value @ the end of year of these calculator is 10000. (10000 divided by 10)

Year      1      2      3      4      5  
 Value      10000      10000      10000      10000      10000

Discount rate of return is under this method. The cash flow of a project are discounted at a rate of 10% by 1st and 2nd method. In this method, the net present value is calculated to the amount of the investment.

The formula is  

$$NPV = A + \frac{C-D}{r} \times (B-r)$$

A = Account value of initial investment  
 B = Discount factor (1/r)  
 C = Present value of cash inflows  
 D = Present value of cash outflows  
 r = Discount rate (10%)

4. Draw the cash flow diagram for a project with the following data:

Year 0: Investment of 100000  
 Year 1: Cash flow of 20000  
 Year 2: Cash flow of 30000  
 Year 3: Cash flow of 40000  
 Year 4: Cash flow of 50000  
 Year 5: Cash flow of 60000

Discount rate = 10%

Project X

Year	Cash flow	Present value of cash flow
0	-100000	-100000
1	20000	18182
2	30000	24183
3	40000	30185
4	50000	36187
5	60000	42189
Present value of cash flows		171766
Initial investment		-100000
NPV		71766

Year 0: Investment of 100000  
 Year 1: Cash flow of 20000  
 Year 2: Cash flow of 30000  
 Year 3: Cash flow of 40000  
 Year 4: Cash flow of 50000  
 Year 5: Cash flow of 60000

Discount rate = 10%

Project Y

Year	Cash flow	Present value of cash flow
0	-100000	-100000
1	30000	27027
2	40000	32073
3	50000	37119
4	60000	42165
5	70000	47211
Present value of cash flows		185595
Initial investment		-100000
NPV		85595

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2) 4.11.19:

Example: Suppose the value of an asset is ₹100000. It is to be sold in 5 years. The value of the asset at the end of each year is given below.

Year	Value of Asset
1	80000
2	60000
3	40000
4	20000
5	10000

2) 4.11.19:

Example: Suppose the value of an asset is ₹100000. It is to be sold in 5 years. The value of the asset at the end of each year is given below.

Year	Value of Asset
1	80000
2	60000
3	40000
4	20000
5	10000

Example: Suppose the value of an asset is ₹100000. It is to be sold in 5 years. The value of the asset at the end of each year is given below.

2) 4.11.19:

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3	40000
4	20000
5	10000

Example: Suppose the value of an asset is ₹100000. It is to be sold in 5 years. The value of the asset at the end of each year is given below.

Year	Value of Asset
1	80000
2	60000
3	40000
4	20000
5	10000

Example: Suppose the value of an asset is ₹100000. It is to be sold in 5 years. The value of the asset at the end of each year is given below.

Year	Value of Asset
1	80000
2	60000
3	40000
4	20000
5	10000

by subtracting IRR from  
by subtracting A/PV from

Present value  
2.18 = 2.3657

Year	Initial Investment	Annual Cash Flow	Present Value
0	(20000)		(20000)
1		4000	3636
2		4000	3256
3		4000	2921
4		4000	2621
5		4000	2356
<b>Total</b>			<b>19746</b>

Project 'Y' = 20% = 4 + (5-4) / (20000 - 19746)

$$= 4 + \frac{5-4}{20000-19746} \times 6$$

$$= 4 + \frac{1}{2554} \times 6$$

$$= 4.002388$$

Calculation of Net Present Value:

Year	Cash inflows	Discount factor	Present value
1	4000	0.833	3332
2	4000	0.678	2712
3	4000	0.551	2204
4	4000	0.451	1804
5	4000	0.371	1484
<b>Total present value</b>			<b>11536</b>
<b>(-) Initial Investment</b>			<b>(20000)</b>
<b>Net Present Value</b>			<b>(8464)</b>

Project 'Y':

Project 'Y' is a Trade (profitable),  
Project 'X' is a Trade.

Year	Cash inflows	Discount factor	Present value
1	20000	0.909	18180
2	20000	0.834	16680
3	20000	0.763	15260
4	20000	0.701	14020
5	20000	0.647	12940
<b>Total present value</b>			<b>76080</b>
<b>(-) Initial Investment</b>			<b>(60000)</b>
<b>Net present value</b>			<b>16080</b>

Profitability Index:-

It is the relationship between net cash inflows & present value of cash outflows. It is one of the techniques of the capital budgeting. It provides ready comparison between different investment proposals. Projects having highest profitability index are to be accepted first & vice versa.

- P1 = Present value of cash inflows / Present value of cash outflows
- P2 = Present value of cash inflows / Present value of cash outflows
- P3 = Present value of cash inflows / Present value of cash outflows

The proposal is accepted if P3 is more than 1 and vice versa.



Project and Machine Selection:

Ques 1: In case of tough project:-  
 P3 (year 1), P4 (year 2), P5 (year 3), P6 (year 4)  
 If the P2 (year 2) is more than 1 & 3 then  
 P4 (year 2) is preferred to accept  
 If the P4 (year 2) is more than 1 & 3 then  
 P3 (year 1) is preferred to accept  
 In case of mutually exclusive projects:  
 In case of mutually exclusive projects:  
 In case of mutually exclusive projects:  
 In case of mutually exclusive projects:  
 In case of mutually exclusive projects:

Highway project:  
 \* It is a long term project, therefore, the life of the project.  
 \* It is subject to government's intervention.  
 \* It is subject to government's intervention.  
 \* It is subject to government's intervention.  
 \* It is subject to government's intervention.

Disadvantages:  
 \* The selection is difficult & time consuming.  
 \* It may give inconsistent results.  
 \* The results are not reliable when compared to NPV.

4. Beta Method: In accordance with procedure in the management 2 alternative machines

Q1: A & B are suggested each costing 24,00,000  
 following when for their use expected to  
 give the following:

Year	A	B
1	0.91	1.00
2	0.85	1.00
3	0.75	1.00
4	0.68	1.00
5	0.62	1.00

The cost of capital is 10%.  
 You're required to compare the profitability of Machine A with the alternative of machine you consider financially preferable.

Capital Investment:  
 It refers to a condition where a project is not in the position to invest in the project due to the constraints of funds.

Ques 2: P1, P2, P3, P4, P5, P6 and P7  
 are mutually exclusive projects. X, Y and Z are given below:-

Year	1	2	3	4	5
P1	0.809	0.828	0.851	0.873	0.897

Year Home project 'X' project 'Y'

Investment	1,50,000	1,00,000
Net cash flow:		
1	40,000	40,000
2	70,000	70,000
3	60,000	50,000
4	20,000	10,000
5	10,000	5,000
	1,50,000	2,00,000

20. M. Ltd. has under consideration 2 projects. exclusive proposals for purchase of machinery.

Machinery	Machine 'X'	Machine 'Y'
Net outlay	1,00,000	75,000
Equip. value	Nil	Nil
Life (yrs)	5 yrs	5 yrs
PPV (₹)		
I yr	25,000	18,000
II yr	35,000	20,000
III yr	35,000	22,000
IV yr	25,000	23,000
V yr	20,000	16,000

(Note: 10% - Profit before Depn and Tax)  
 discounting factor table for the 5% discount  
 The management, etc. had alternative  
 swing by factor 6:10:8 in assets.  
 Year 1 2 3 4 5

Present value	0.909	0.823	0.751	0.683	0.621
Calculate PVP and NPV.					

21. Capital Co. has made 4 alternative offers project 'N' 3 'O' from 30% preference.

particulars	project 'N'	project 'O'
Investment	20,000	30,000
Expected life	4 yrs	5 yrs
Project net income (after interest depn cost taxes)		
I yr	2,000	4,000
II yr	15,000	10,000
III yr	15,000	2,000
IV yr	1,000	1,000
V yr	-	1,000

22. The requirement of net income @ 12% which project to be undertaken.

23. P. Ltd. has under consideration 2 mutually exclusive proposals for the purchase of machinery.

Machinery	Machine 'N'	Machine 'O'
Net outlay	200,000	1,10,000
Equip. value	0	
Life (yrs)	5	3
PPV (₹)		
I yr	50,000	30,000
II yr	40,000	40,000
III yr	70,000	40,000
IV yr	50,000	20,000
V yr	10,000	32,000

Present value	0.909	0.823	0.751	0.683	0.621
Calculate PVP and NPV.					

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4. Calculation of Profitability: Example

Year	Revenue	Expenses
1	100,000	80,000
2	120,000	90,000
3	140,000	100,000
4	160,000	110,000
5	180,000	120,000

5. Project Value of Cash-flows

Year	Initial Investment	NPV
0	100,000	-100,000
1		10,000
2		15,000
3		20,000
4		25,000
5		30,000

6. The objective of NPV  
 The objective of NPV is to determine the value of an investment. It is calculated as the sum of the present value of cash flows minus the initial investment. The value of an investment is positive if the NPV is positive and negative if the NPV is negative.

NPV =  $\sum \frac{CF_t}{(1+r)^t} - I_0$   
 where  $CF_t$  is the cash flow in year  $t$ ,  $r$  is the discount rate, and  $I_0$  is the initial investment.

Year	Revenue	Expenses	NPV
0		100,000	-100,000
1	100,000	80,000	10,000
2	120,000	90,000	15,000
3	140,000	100,000	20,000
4	160,000	110,000	25,000
5	180,000	120,000	30,000

7. Project Profitability

Project Profitability =  $\sum \frac{CF_t}{(1+r)^t} - I_0$   
 where  $CF_t$  is the cash flow in year  $t$ ,  $r$  is the discount rate, and  $I_0$  is the initial investment.

NPV =  $\sum \frac{CF_t}{(1+r)^t} - I_0$   
 where  $CF_t$  is the cash flow in year  $t$ ,  $r$  is the discount rate, and  $I_0$  is the initial investment.

8. Calculation of Net Present Value: Project 1

Year	Revenue	Expenses	NPV
0		100,000	-100,000
1	100,000	80,000	10,000
2	120,000	90,000	15,000
3	140,000	100,000	20,000
4	160,000	110,000	25,000
5	180,000	120,000	30,000

NPV = 100,000 - 100,000 = 0

Year	Cost of Capital	Market Value	NPV
1	10000	10000	0.134
2	10000	10000	0.131
3	10000	10000	0.128
4	10000	10000	0.125
5	10000	10000	0.121
Total present value		50000	0.640
Initial investment		100000	-1.000
Net present value			-0.360

Calculation of NPV

Year	Yearly Cash Inflow	Present Value Factor	Present Value
1	10000	0.909	9090
2	10000	0.819	8190
3	10000	0.733	7330
4	10000	0.658	6580
5	10000	0.583	5830
Total present value			47020
Initial investment			100000
Net present value			-52980

NPV is higher than zero, therefore investment is profitable.

NPV = 47020 - 100000 = -52980

Year	Yearly Cash Inflow	Present Value Factor	Present Value
1	15000	0.909	13635
2	15000	0.819	12285
3	15000	0.733	10995
4	15000	0.658	9870
5	15000	0.583	8745
Total present value			55530
Initial investment			100000
Net present value			-44470

NPV is higher than zero, therefore investment is profitable.

NPV = 55530 - 100000 = -44470

Year	Yearly Cash Inflow	Present Value Factor	Present Value
1	20000	0.909	18180
2	20000	0.819	16380
3	20000	0.733	14660
4	20000	0.658	13160
5	20000	0.583	11660
Total present value			74040
Initial investment			100000
Net present value			-25960

NPV is higher than zero, therefore investment is profitable.

NPV = 74040 - 100000 = -25960

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Year	Project 'M'	Project 'B'
1	1,000	3,000
2	1,500	3,000
3	1,500	3,000
4	1,500	3,000
5	1,500	3,000

Project 'M' = 10,000  
 Project 'B' = 15,000

Project 'M' = 10,000  
 Project 'B' = 15,000

Project 'M' = 4,500  
 Project 'B' = 2,000

Conclusion: Project 'M' should be selected, as it is higher than project 'B'

1) Calculation of pay back period:

Year	Project 'M'	Project 'B'
1	1,000	3,000
2	1,500	3,000
3	1,500	3,000
4	1,500	3,000
5	1,500	3,000

Pay P = 4.125 years

Year	Project 'M'	Project 'B'
1	1,000	3,000
2	1,500	3,000
3	1,500	3,000
4	1,500	3,000
5	1,500	3,000

4 + 15,000 = 4 + 15,000

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Quantity Schedule of Net present Value

Year	Outlay	NPV Factor	Present Value
1	40000	0.909	36360
2	10000	0.819	8190
3	10000	0.731	7310
4	10000	0.646	6460
5	10000	0.562	5620
Total Present Value			64940
Initial Investment			100000
Net Present Value			-35060

Case: Machine B

Year	Outlay	NPV Factor	Present Value
1	30000	0.909	27270
2	15000	0.819	12285
3	30000	0.731	21930
4	10000	0.646	6460
5	30000	0.562	16860
Total present value			84805
Initial Investment			150000
Net present Value			-65195

1) Why are NPV and IRR requirements not the best way of comparing the value of investment? It is not suitable for investment comparison by the manager of the firm because:

- Investment criteria: Internal Rate of Return
- Profitability Index
- Pay back period method

Within the investment:

Production: 100000 / 100000 = 1

Cost of investment: 100000 / 100000 = 1

Net Present Value Calculation

Year	NPV	NPV
2001	1000	1000
2002	1000	1000
2003	1000	1000
2004	1000	1000
2005	1000	1000
2006	1000	1000

It is required that each of alternative project will require an additional investment capital of 10000 which will be received back in five years. The value of each project after 5 years is provided under. Although the investment value of 10000 is given below:

Year: 1, 2, 3, 4, 5

Project: 10000, 10000, 10000, 10000, 10000

2) Do part 2 projects A & B require an investment of 10000 each, the income return given for this project will be:

Year	Project A	Project B
1	10000	10000
2	10000	10000
3	10000	10000
4	10000	10000
5	10000	10000

3) Calculate NPV for projects A & B. Assume cost of investment is 100000.

NPV: 100000 / 100000 = 1

NPV: 100000 / 100000 = 1



Types: Spm

Capital App  
Project M1: 10000  
(After interest, dep<sup>n</sup> + tax)

1	10000	10000
2	10000	10000
3	10000	10000
4	10000	10000
5	10000	10000

If interest rate is 10% then...

2) To participate in work...  
at the beginning of 2022...  
required part of 10000 is 10000...  
available project on market...  
• 10000 (10000) • 10000 (10000)

Project M	Project N
10000	10000
10000	10000
10000	10000
10000	10000
10000	10000

But interest Capital department  
End of 2021 10000  
End of 2022 10000  
End of 2023 10000  
End of 2024 10000  
End of 2025 10000

The interest value of P1 to be received is

End of each year 10000 per year...  
PV 10000 0.917 0.833 0.751 0.677 0.613

After dividend of profit...  
The profit is given in the problem is...  
adding dep<sup>n</sup> and after tax transfer...  
dep<sup>n</sup> end of the...

The project group in problem can be...  
usually for comparing 10000...  
It is... in growing to amount 20000 on...  
... about 10% every 4 years...  
... not end year on a future...

Year	1	2	3	4	5
10000	10000	10000	10000	10000	10000
0.917	0.833	0.751	0.677	0.613	0.559
9170	8330	7510	6770	6130	5590
45850	41650	37550	33650	30000	26550

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2000 - 1000 = 1000 (8000)

1000 + 1000 = 2000 (10000)

2000 + 1000 = 3000

2000 = 10000

1) What is an overdraft? It is a facility provided by a bank to a customer to withdraw money from their current account up to a certain limit without the need of a cheque or a demand draft. It is a part of the current account.

2) What is a bill of exchange? It is a written order by one party to another party to pay a certain amount of money to a third party on a fixed date. It is a negotiable instrument.

3) What is a bill of lading? It is a receipt issued by a carrier to a shipper for goods shipped. It is a document of title and a receipt for the goods.

Calculation of Profitability

Particulars	Particulars	Particulars
1. Sales	10000	10000
2. Less: Cost of Sales	(6000)	4000
3. Gross Profit	4000	4000
4. Less: Selling Expenses	(1000)	3000
5. Net Profit	3000	3000

Profit = Sales - Cost of Sales - Selling Expenses

1. Sales 10000  
2. Less: Cost of Sales (6000)  
3. Gross Profit 4000

Calculation of Profitability

Particulars	Particulars
1. Sales	10000
2. Less: Cost of Sales	(6000)
3. Gross Profit	4000
4. Less: Selling Expenses	(1000)
5. Net Profit	3000

Profit = Sales - Cost of Sales - Selling Expenses

Calculation of Profitability

Profit = Sales - Cost of Sales - Selling Expenses

→ The waiting period

Along the waiting period, because the value of cash flow is reduced in present

a) the money which has been invested could be invested in another project, which would earn you interest during the years which have waited

b) if, instead, you were about the expecting the you'll have to thereby lowering the value that would be paid by someone for their future cash flows

Calculation of present value

Present value is the value of a sum of money to be received at a future point of time

$$PV = \frac{FV}{(1+r)^n}$$

where FV = amt to be received at the end of the year or (future value)

r = compound rate of

→ Present value of single cash flow

It can be computed with the help of the foll. formula:

$$PV = \frac{FV}{(1+r)^n} \quad \text{or} \quad PV = FV \times PVF(r, n)$$

Present value of

PV = present value, FV/PV = Future Value

r = Discount, n = No. of years

PVF = Present value factor

## 2. TIME VALUE OF MONEY

Meaning of Time Value of Money:

It refers to 'time has got a value'. The paper value keeps on changing over a period of time. The purchasing power of a rupee is there increase or decrease but its value remains constant.

Need for Time Value of Money:

\* Reinvestment opportunity:

Money received today can be reinvested to get further return.

\* Uncertainty - The present is more certain than the future which is full of uncertainties.

\* Inflation - During inflation, the value of money goes on decreasing as the price level goes on increasing. As a result, people generally opt for the present to the future.

\* Personal consumption preference: - Mainly individuals have a strong preference for immediate rather than delayed consumption.

Future value:

It is the value of an asset of a specific date which measures the nominal future sum of money whereas the sum of money is worth at a specific time. In the future, assuming a certain interest rate or more rate of return.

Meaning of Future Value:

The value of an asset or liability at a particular date is the future value which is equivalent to the value of a specified sum at present.

$FV = PV(1+r)^n$   
 $PV = \frac{FV}{(1+r)^n}$   
 $r = \text{rate of interest}$   
 $n = \text{no. of years}$   
 $PV = \text{Present Value}$

Future value of a sum of money at present rate per cent

Ex: Find out future value of a sum of Rs 1000 after 5 years at 10% interest per annum.  
 $FV = PV(1+r)^n$   
 $= 1000(1+0.10)^5$   
 $= 1000(1.10)^5$   
 $FV = 1610.51$

Ex: A sum of Rs 1000 for 3 years at a rate of 10% interest per annum.  
 $FV = PV(1+r)^n$   
 $= 1000(1+0.10)^3$   
 $= 1000(1.10)^3$   
 $FV = 1331$

Ex: Find out future value of Rs 1000 after 5 years at 10% interest per annum.  
 $FV = PV(1+r)^n$   
 $= 1000(1+0.10)^5$   
 $= 1000(1.10)^5$   
 $FV = 1610.51$

Ex: Find out future value of Rs 1000 after 5 years at 10% interest per annum.  
 $FV = PV(1+r)^n$   
 $= 1000(1+0.10)^5$   
 $FV = 1610.51$

$1000(1.10)^5$   
 $1610.51$   
 $1734$

Ex: Calculate the sum deposited in bank for a period of 5 years @ 10% p.a. given

$FV = PV(1+r)^n$   
 $1734 = PV(1.10)^5$   
 $PV = \frac{1734}{(1.10)^5}$   
 $PV = 1000$

Ex: How much a deposit of Rs 1000 will be worth after 5 years at 10% interest per annum? (Future value)

$FV = PV(1+r)^n$   
 $= 1000(1+0.10)^5$   
 $= 1000(1.10)^5$   
 $FV = 1610.51$

In case of compound interest, the compounding period is the period for which the interest is earned on the principal and on the interest earned on it. This is known as compounding. In case of simple interest, the compounding period is the period for which the interest is earned on the principal only. This is known as simple interest.

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When payments are made more frequently than once a year or when interest is compounded more than once in a year, we have to convert the stated interest rate to periodic interest rate and number of periods to the number of periods.

a) When interest is paid half yearly

$$FV = PV(1 + \frac{r}{2})^n$$

b) When interest is paid quarterly

$$FV = PV(1 + \frac{r}{4})^n$$

When interest is paid monthly

$$FV = PV(1 + \frac{r}{12})^n$$

When interest is payable daily

$$FV = PV(1 + \frac{r}{365})^n$$

1) Calculate future value of \$5000 in an interest free bank and calculate it if is compounded at 12% per half yearly, half and the compound value is 4000, value after 2.00 years = 1.594

$$FV = PV(1 + \frac{r}{2})^n = 5000(1 + \frac{12}{2})^{2 \times 2}$$

$$= 5000(1 + 6)^4 = 4000 \times 1.594$$

$$FV = 1.594$$

2) Calculate the future value of \$2000 invested for 5 years at rate of interest of 12% compounded half yearly assuming the compound table compound value factor per half per year @ half rate

$$FV = PV(1 + \frac{r}{2})^n = 2000(1 + \frac{12}{2})^{5 \times 2}$$

$$= 2000(1 + 6)^{10}$$

$$FV = 2000 \times 1.987 = FV = 3974.00$$

3) Man has deposit \$1000 for 5 years at the interest rate of 12% compounded half per. If interest is calculated twice only. Find the amount after 5 years. Calculate future value quarterly.

$$FV = PV(1 + \frac{r}{4})^n = 1000(1 + \frac{12}{4})^{5 \times 4}$$

$$= 1000(1 + 3)^{20}$$

$$FV = 1.53$$

4) Calculate the future value of \$5000 in an interest free bank of 5 years @ 12% per. interest is compounded quarterly. Find out the FV. Equate = 1.8063

$$FV = PV(1 + \frac{r}{4})^n = 5000(1 + \frac{12}{4})^{5 \times 4}$$

$$= 5000(1 + 3)^{20} = 9000(1.603)^{10}$$

$$= 9000(1.603) \quad FV = 16354$$

10) Judson bank opens 12% interest compound quarterly. If 2000 is made in one initial deposit how much it will be in terms of present value of 5th year.

Sol<sup>n</sup>:  

$$FV = PV(1 + \frac{r}{n})^{nt}$$

$$= 1000(1 + 0.03)^{20}$$

$$= 1200(1.03)^{20}$$

Future value of sum paid  
 sum paid less of a bank  
 of time is known as present value  
 after time, maturity is a fixed  
 payment to receipt each year for a  
 specified number of years

$$FVA = R \left[ \frac{(1+i)^n - 1}{i} \right] + R(1+i)^{n-1}$$

R = loan rate plus  
 i = interest rate  
 n = number of years

11) Calculate future value of annuity of 2500 deposited at end of each year @ 8% for a period of 5 years.

Sol<sup>n</sup>:  

$$FVA = R \left[ \frac{(1+i)^n - 1}{i} \right] + R(1+i)^{n-1}$$

$$= 2500 \left[ \frac{(1+0.08)^5 - 1}{0.08} \right] + 2500(1+0.08)^{5-1}$$

$$= 14900(1.08)^5 + 2500(1.08)^4$$

$$= 4310 + 5955 + 5415 + 5300 + 5000$$

$$= 26080$$

12) Mr. Kumar deposit 3000 @ end of every year for 5 years and the deposit earns compound interest @ 12% p.a. Determine how many such money will have @ the end of 5 years.

Sol<sup>n</sup>:  

$$FVA = R \left[ \frac{(1+i)^n - 1}{i} \right] + R(1+i)^{n-1}$$

$$= 3000 \left[ \frac{(1+0.12)^5 - 1}{0.12} \right] + 3000(1+0.12)^{5-1}$$

$$= 9428 + 3606 + 3500 + 3930 + 4300$$

$$= 24784$$

13) Calculate future value of annuity of 2000 deposited @ end of each year at 8% for a period of 5 years.

Sol<sup>n</sup>:  

$$FVA = R \left[ \frac{(1+i)^n - 1}{i} \right] + R(1+i)^{n-1}$$

$$= 2000 \left[ \frac{(1+0.08)^5 - 1}{0.08} \right] + 2000(1+0.08)^{5-1}$$

$$= 14000(1.08)^5 + 2000(1.08)^4$$

$$= 5048 + 4928 + 4994 + 4300 + 4000$$

$$= 23270$$

14) Mr. X deposits ₹ 2000 at end of every year for 5 years in an account that earns 10% interest compounded annually. Calculate the amount at the end of 5 years.

$$FV = P(1+r)^n + P(1+r)^{n-1} + \dots + P(1+r)^1 + P$$

$$= 2000(1.1)^5 + 2000(1.1)^4 + \dots + 2000(1.1) + 2000$$

$$= 2000 \left[ \frac{(1.1)^6 - 1}{0.1} \right]$$

$$= 2000 \times 6.71561$$

$$= ₹ 13,431.22$$

Future value of annuity formula

It is the future value of annuity deposit made at a particular rate of interest for a definite period of time in consistent intervals. It can also calculate future value of business with given word given or period of time & a particular rate of interest by using the following formula:

$$FV = P \left[ \frac{(1+r)^n - 1}{r} \right] + P(1+r)^n$$

NOTE: Future value of annuity calculation  
 $P =$  Annual cash flow  
 $r =$  interest rate  
 $n =$  time of years

15) Calculate the future value of the following if it is invested @ 10% interest at the end of each year.

Year	Amount deposited
1	₹ 1000
2	₹ 2000
3	₹ 3000
4	₹ 4000

16) Calculate the future value @ end of 4 years of the following series of payments @ 9% rate of interest.

Year	Amount deposited
1	₹ 1000
2	₹ 2000
3	₹ 3000
4	₹ 4000
5	₹ 5000

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Find out the PV of ₹1000 received at the end of year. If the discount rate is 9% p.a.

Calculate PV of a sum of ₹5000 received after 2 years, if the discount rate is 8% p.a.

Present value of annuity as a series of equal or uneven future cashflows.

If the investors expect uniform cashflows over a period of time at a constant discount rate. Such cashflows present value will always be less, when compared to the future flows. It can be determined by using following formula.

$$PVA = \frac{P_1}{(1+i)^1} + \frac{P_2}{(1+i)^2} + \frac{P_3}{(1+i)^3} + \frac{P_4}{(1+i)^4}$$

PVA = present value of annuity cashflows

$P_1$  = uniform value of payments

$i$  = discount rate or interest rate

Find out PV of annuity receipt of ₹1000 — received for 4 yrs @ the rate of 12% discount rate.

Find out the PV of 5 years annuity of ₹8000 discounted @ 9%

Present Value of Uneven future Cashflows:

It can be determined the PV of uneven cashflows by using the following formula:-

$$PVECF = \frac{P_1}{(1+i)^1} + \frac{P_2}{(1+i)^2} + \frac{P_3}{(1+i)^3} + \frac{P_4}{(1+i)^4} + \frac{P_5}{(1+i)^5}$$

PVECF = Present Value of Uneven Cashflows

$P_1, P_2, P_3$  = Uneven Cashflows,  $i$  = discount rate

2) Calculate the value of the first amount of payments in week 60 at the end of each year for a duration of 5 years @ 12% interest rate.

End flow is end of 1st year = \$3,000

1st year	= \$3,000
2nd year	= \$3,900
3rd year	= \$4,800
4th year	= \$5,700
5th year	= \$6,600

3) Calculate the value of the first amount of payments made at the end of each year for a period of 5 years @ 12% interest rate.

End flow is the end of 1st year = \$3,000

1st year	= \$3,000
2nd year	= \$3,900
3rd year	= \$4,800
4th year	= \$5,700
5th year	= \$6,600

**Problems:**

An annuity is, therefore, a series of fixed payments which are received or to be paid by you or your firm for you or a company for a certain period of time.

**Types of Annuities:**

- **Ordinary Annuity:**
  - An ordinary annuity involves payments being made at the end of each period, for instance, a mortgage, a car loan, a pension plan, a bond, etc.
- **Annuity due:**

Note: The category of annuities, the payments are required to be made at the beginning of each period. An example is a mortgage, a car loan, a pension plan, etc. Annuity due is a series of payments made at the beginning of each period. An example is a mortgage, a car loan, a pension plan, etc.

• **Fixed Annuity:**

- An annuity is a series of payments made at the beginning of each period. An example is a mortgage, a car loan, a pension plan, etc.

• **Variable Annuity:**

- An annuity is a series of payments made at the beginning of each period. An example is a mortgage, a car loan, a pension plan, etc.

• **Fixed Annuity:**

- An annuity is a series of payments made at the beginning of each period. An example is a mortgage, a car loan, a pension plan, etc.

The value of an annuity is the present value of the payments made at the beginning of each period. An example is a mortgage, a car loan, a pension plan, etc.

$$PV = \frac{PMT}{r} \left[ 1 - \frac{1}{(1+r)^n} \right]$$

PV = Future value of all compound int. payments  
 FV = Amount of each installment  
 P = rate of interest in % of year

Q1) Mr. X is depositing ₹ 2000 at the end of each year in a bank which deposits 10% p.a. for 5 years. What is the amount of interest? How much amount, Mr. X will have at the end of 5th year?

Compound / Future value of Annuity Due  
 The difference between the present value of an annuity & compound interest annuity is that while compound interest annuity is an annuity of payments deposited at the end of the period, annuity due is deposited at the beginning of the year when an amount is deposited.

$PV = A \times \frac{1 - (1+r)^{-n}}{r}$  (FV) (FV)  
 FV = Future Value, P = Annuity Amount  
 r = rate of interest in % of year

Q2) If you have deposit ₹ 1000 at the beginning of each year and deposit the same the amount what is the value of this amt. at the end of 4 years at the rate of interest 10% what amount is the amount?

Present value of an annuity:

In addition to present value, the concept of annuity is calculating present value of an annuity

$$PV = \left[ \frac{1 - (1+r)^{-n}}{r} \right] \times A + \frac{A}{r} [1 - (1+r)^{-n}]$$

Q3) Mrs. X has deposit ₹ 20000 monthly for 5 yrs. She deposits the money at the end of each year. What is the present value of annuity if the interest rate is 10%?

Present Value of Annuity due:

It can be found when an amt. is deposited at the beginning of each year instead of at the end of the year. The difference is that the amt. is deposited at the beginning of the period.

Q4) Mr. Kabir has to deposit ₹ 1000 every year at the beginning of each year for 5 yrs at the rate of return. The same person can save the amt. at 10% with a 10% adjustment because the amt. has been deposited at the beginning of year. This amt. will be paid to Mr. Kabir. Therefore, the person will be multiplied with (1+r)<sup>n</sup>.

explained below:  
 $PV = A \times \frac{1 - (1+r)^{-n}}{r}$  (FV) (FV)

Q5) Mr. Kabir has to deposit an amt. of ₹ 100000 which he has to pay at the end of each year. What should he deposit at the beginning of each year if he has to pay ₹ 100000 at the end of 5 years?

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Present value of perpetuity

A perpetuity is a financial instrument that allows to pay an equal cash flow, per period of time, as long as series of pay, hence a perpetuity can be regarded as  $PV = \frac{C}{r}$  where  $C$  is cash flow and  $r$  is discount rate.

Example 1st, find the present value of an annuity of 1000 per year for 10 years, if the discount rate is 10%.

Answer:  $PV = \frac{1000}{0.10} (1 - \frac{1}{1.10^{10}}) = 6144.57$

13) Find PV of 2% later to be received after 5 years, given rate of discounting 7%. There is a 10% discount factor, while the relevant discount factor is  $PV = 0.713$ .

14) Max. Monthly in the interest 12% per year, given you have time preference for money is 12% per year, the present value factor of 12% discount is 0.713. Calculate PV by using the discount factor.

15) Mr. Anand is to receive 2000 after 5 years from now. He has preference for money at 10%. Calculate PV by discounting in discount factor table. The relevant factor is 0.681.

16) Find the PV of an annuity, except of 1000 per year for 10 years, discount factor is 0.681, where the present value is 6810.

Rolling period

The Rolling term is the period of time measured for a quantity, the length, in this case, is 10 years. It is applied to population growth, inflation and national behavior. Examples of growth, compound interest, the value of investment, discount and many other things which tend to grow over time.

17) Find the PV of an annuity, where the relevant factor is 0.681, where the present value is 6810.

18) An effective rate of interest, where the relevant factor is 0.681, where the present value is 6810.

19) Find the PV of an annuity, where the relevant factor is 0.681, where the present value is 6810.

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discount

18) What is PV of ₹50 per year forever @ 6%?

19) What is PV of ₹10,000 received per year forever @ 10% discount rate?

Ans

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