

Code: 23HS1401

II B.Tech - II Semester – Regular Examinations - MAY 2025

**MANAGERIAL ECONOMICS AND FINANCIAL  
ANALYSIS**

(Common for CIVIL, EEE, ECE, CSE)

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.

4. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

**PART – A**

		BL	CO
1.a)	Define Economics.	L1	CO1
1.b)	Describe Demand determinants.	L1	CO2
1.c)	What are Iso costs?	L1	CO1
1.d)	What is skimming pricing?	L1	CO2
1.e)	List out the Features of sole trading firm.	L1	CO3
1.f)	Describe the features of joint stock company.	L1	CO3
1.g)	List out Objectives of accounting.	L1	CO1
1.h)	Explain simple interest method in detail.	L1	CO4
1.i)	Define Depreciation.	L1	CO1
1.j)	Describe the Objectives of Capital Budgeting.	L1	CO4

**PART – B**

			BL	CO	Max. Marks
<b>UNIT-I</b>					
2	a)	Explain the scope and importance of Managerial economics.	L2	CO1	5 M
	b)	Illustrate price elasticity of Demand.	L3	CO1	5 M
<b>OR</b>					
3	a)	Define Demand. Describe the Law of Demand.	L2	CO1	5 M
	b)	Explain the exceptions of Law of demand.	L1	CO1	5 M
<b>UNIT-II</b>					
4	a)	Explain Cobb-Douglas Production function.	L1	CO2	5 M
	b)	Describe the features of Perfect competition.	L1	CO2	5 M
<b>OR</b>					
5	a)	Describe the Law of returns to scale.	L1	CO2	5 M
	b)	What is BEP? Explain with a neat diagram.	L2	CO2	5 M
<b>UNIT-III</b>					
6	a)	Define Partnership. Explain the merits and demerits of partnership.	L2	CO3	5 M
	b)	Describe the importance and drawbacks of public sector enterprises.	L2	CO3	5 M
<b>OR</b>					

7		What is the impact of Liberalization in Indian business environment?	L3	CO3	10 M
<b>UNIT-IV</b>					
8		Explain the functions of Financial Management.	L2	CO4	10 M
<b>OR</b>					
9	a)	Describe the process of calculating compound interest with example.	L2	CO4	5 M
	b)	What is double entry system? Explain the importance of system.	L2	CO4	5 M
<b>UNIT-V</b>					
10		Explain types of Depreciations.	L2	CO4	10 M
<b>OR</b>					
11		Explain different methods of Capital budgeting techniques.	L2	CO4	10 M

Scheme of Valuation for question paper

Code: 23HS1401

PVP 23

**II B.Tech. I Semester – Regular Examinations – May – 2025**  
**Managerial Economics and Financial Analysis**  
**(Common for CE, EEE, ECE, CSE)**

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4. All parts of Question paper must be answered in one place

**PART – A**

- |  |    |
|--|----|
| 1.a) Define Economics.                             | 2M |
| 1.b) Describe Demand determinants.                 | 2M |
| 1.c) What are Iso costs?                           | 2M |
| 1.d) What is skimming pricing?                     | 2M |
| 1.e) List out the Features of sole trading firm.   | 2M |
| 1.f) Describe the features of joint stock company. | 2M |
| 1.g) List out Objectives of accounting.            | 2M |
| 1.h) Explain simple interest method in detail.     | 2M |
| 1.i) Define Depreciation.                          | 2M |
| 1.j) Describe the Objectives of Capital Budgeting. | 2M |

**PART – B**

**UNIT-I**

- |   |    |
|---|----|
| 2. a. Explain the scope and importance of Managerial economics. | 5M |
| b. Illustrate price elasticity of Demand.                       | 5M |
| 3. a. Define Demand. Describe the Law of Demand.                | 5M |
| b. Explain the exceptions of Law of demand.                     | 5M |

**UNIT-II**

- |  |    |
|--|----|
| 4. a. Explain Cobb-Douglas Production function.  | 5M |
| b. Describe the features of Perfect competition. | 5M |
| 5. a. Describe the Law of returns to scale.      | 5M |
| b. What is BEP? Explain with a neat diagram.     | 5M |

**UNIT-III**

- |   |     |
|---|-----|
| 6. a. Define Partnership. Explain the merits and demerits of partnership. | 5M  |
| b. Describe the importance and drawbacks of public sector enterprises.    | 5M  |
| 7. What is the impact of Liberalization in Indian business environment?   | 10M |

**UNIT-IV**

- |   |     |
|---|-----|
| 8. Explain the functions of Financial Management.                         | 10M |
| 9. a. Describe the process of calculating compound interest with example. | 5M  |
| b. What is double entry system? Explain the importance of system.         | 5M  |

**UNIT-V**

- |  |     |
|--|-----|
| 10. Explain types of Depreciations.                            | 10M |
| 11. Explain different methods of Capital budgeting techniques. | 10M |

Key/ Solutions for question paper

PVP 20

Code: 23HS1401

**II B.Tech. I Semester – Regular Examinations – May – 2025**  
**Managerial Economics and Financial Analysis**  
**(Common for CE, EEE, ECE, CSE)**

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**PART – A**

**1.a) Define Economics.**

**2M**

*Definition 2M*

Economics is the study of how individuals and societies allocate limited resources to satisfy unlimited wants. It deals with production, distribution, and consumption of goods and services.

**1.b) Describe Demand determinants.**

**2M**

*Writing any 4 determinants – 2M*

Determinants of demand include:

1. Price of the good
2. Consumer income
3. Prices of related goods (substitutes and complements)
4. Tastes and preferences
5. Future expectations
6. Number of buyers in the market

**1.c) What are Iso costs?**

**2M**

*Explanation – 2M*

Iso-costs represent all combinations of two inputs (like labor and capital) that cost the same total amount. It is a cost constraint line used in production analysis.

**1.d) What is skimming pricing?**

**2M**

*Explanation – 2M*

Skimming pricing is a strategy where a product is launched at a high price to maximize profits from early adopters, and the price is gradually lowered to attract more price-sensitive customers.

**1.e) List out the Features of sole trading firm.**

**2M**

*Writing any 4 features 2M*

1. Single ownership
2. Unlimited liability
3. Direct control
4. Sole profit retention
5. Limited capital
6. Simple legal formalities

**1.f) Describe the features of joint stock company.**

2M

*Writing any 4 features 2M*

1. Separate legal entity
2. Limited liability
3. Perpetual succession
4. Transferability of shares
5. Common seal
6. Management by board of directors

**1.g) List out Objectives of accounting.**

2M

*Writing any 4 objectives 2M*

1. Recording financial transactions
2. Determining profit or loss
3. Measuring financial position
4. Assisting in decision-making
5. Ensuring legal compliance

**1.h) Explain simple interest method in detail.**

2M

*Explanation – IM Formula – IM*

It may be defined as Interest that is calculated as a simple percentage of the original principal amount

$$FV_n = (P + nr)$$

$FV_n$  = Future Value after n time period

P = principal

r = interest rate

n = number of time periods

or

Simple interest is calculated only on the principal amount over time.

Formula:  $SI = P \times R \times T / 100$

Where: *SI = Simple Interest, P = Principal, R = Rate (%), T = Time (years)*

**1.i) Define Depreciation.**

2M

*Definition – 2M*

Depreciation is the reduction in the value of an asset over time due to wear and tear, obsolescence, or usage. It is recorded as an expense in accounting.

**1.j) Describe the Objectives of Capital Budgeting.**

2M

*Writing any 4 objectives – 2M*

1. Evaluate long-term investment opportunities
2. Maximize firm value and profits
3. Manage risk and return
4. Ensure efficient allocation of capital
5. Support strategic planning decisions

**PART – B**

**UNIT-I**

**2. a. Explain the scope and importance of Managerial economics.**

**5M**

*Writing Scope and importance – 5M*

Managerial economics is primarily concerned with the application of economic principles and theories to five types of resource decisions made by all types of business organizations.

- a. The selection of product or service to be produced.
- b. The choice of production methods and resource combinations.
- c. The determination of the best price and quantity combination
- d. Promotional strategy and activities.
- e. The selection of the location from which to produce and sell goods or service to consumer.

The production department, marketing and sales department and the finance department usually handle these five types of decisions.

The scope of managerial economics covers two areas of decision making

- a. Operational or Internal issues
- b. Environmental or External issues

**Operational issues:**

1. Theory of demand and Demand Forecasting
2. Pricing and Competitive strategy
3. Production cost analysis
4. Resource allocation
5. Profit analysis
6. Capital or Investment analysis
7. Strategic planning

**Environmental or External Issues:**

- a. The type of economic system in the country.
- b. The general trends in production, employment, income, prices, saving and investment.
- c. Trends in the working of financial institutions like banks, financial corporations, insurance companies
- d. Magnitude and trends in foreign trade;
- e. Trends in labour and capital markets;
- f. Government's economic policies viz. industrial policy monetary policy, fiscal policy, price policy etc.

**2b. Illustrate price elasticity of Demand.**

**5M**

*Explanation – 4M Any Example – 1M*

Price elasticity of demand measures changes in quantity demanded to a change in Price. It is the ratio of percentage change in quantity demanded to a percentage change in price.

$$\text{Price elasticity} = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in the price of commodity}}$$

Types of price elasticity of demand:

1. Perfectly elastic demand
2. Perfectly inelastic demand
3. Relatively elastic demand
4. Relatively inelastic demand
5. Unit elasticity of demand

**Illustration Example:**

If price of a product drops from ₹100 to ₹90 and demand increases from 100 units to 120 units:

$$\text{Price elasticity} = \frac{120 - 100}{100 - 90} = 2 \rightarrow \text{Elastic demand}$$

**3. a. Define Demand. Describe the Law of Demand.**

5M

*Definition of demand – 2M      Law of demand – 3M*

**Demand:** Demand is an economic principle referring to a consumer's desire to purchase goods and services and willingness to pay a price for a specific good or service. Holding all other factors constant.

**Law of Demand:**

Law of demand shows the relation between price and quantity demanded of a commodity in the market. In the words of Marshall, "the amount demand increases with a fall in price and diminishes with a rise in price".

A rise in the price of a commodity is followed by a reduction in demand and a fall in price is followed by an increase in demand, if a condition of demand remains constant.

**3. b. Explain the exceptions of Law of demand.**

5M

*Writing any 5 exceptions – 5M*

**Giffen Goods:** Inferior goods where higher price leads to more demand. When the price of an inferior good falls, the poor will buy less and vice versa. For example, when the price of maize falls, the poor are willing to spend more on superior goods than on maize if the price of maize increases, he has to increase the quantity of money spent on it. Otherwise he will have to face starvation. Thus a fall in price is followed by reduction in quantity demanded and vice versa. "Giffen" first explained this and therefore it is called as Giffen's paradox.

**Veblen Goods:** Luxury goods where demand increases with price. Rich people buy certain good because it gives social distinction or prestige for example diamonds are bought by the richer class for the prestige it possess. If the price of diamonds falls poor also will buy it hence they will not give prestige. Therefore, rich people may stop buying this commodity.

**Speculative Expectations:** Anticipated further price rise. If the price of the commodity is increasing the consumers will buy more of it because of the fear that it increase still further, Thus, an increase in price may not be accomplished by a decrease in demand.

**Necessities:** Basic needs with inelastic demand. In the case of necessities like rice, vegetables etc. people buy more even at a higher price.

**Ignorance Effect:** Consumers unaware of substitutes or quality. Sometimes, the quality of the commodity is Judge by its price. Consumers think that the product is superior if the price is high. As such they buy more at a higher price.

## UNIT-II

### 4. a. Explain Cobb-Douglas Production function.

5M

*Explanation with formula – 5M*

Economists C. W. Cobb and P. H. Douglas used a special form of production function, which is known as the Cobb-Douglas Production Function. Cobb-Douglas (C-D) production function is of the form

$$Q = AL^{\alpha}K^{\beta}$$

where L = quantity used of labour

K = quantity used of capital

Q = quantity of output produced

A,  $\alpha$ ,  $\beta$  = positive constants.

Actually, the parameter A is the efficiency parameter. It serves as an indicator of the state of technology. The higher the value of A, the higher would be the level of output that can be produced by any particular combination of the inputs.

The Cobb-Douglas production function allows for interchange between labour and capital. It represents the typical convex isoquant i.e. an isoquant in which labour and capital can be substituted with one another, if not perfectly.

### 4. b. Describe the features of Perfect competition.

5M

*Describing Any 5 features – 5M*

**A large number of buyers and sellers:** The number of buyers and sellers is large and the share of each one of them in the market is so small that none has any influence on the market price.

**Homogeneous product:** The product of each seller is totally undifferentiated from those of the others.

**Free entry and exit:** Any buyer and seller is free to enter or leave the market of the commodity.

**Perfect knowledge:** All buyers and sellers have perfect knowledge about the market for the commodity.

**Indifference:** No buyer has a preference to buy from a particular seller and no seller to sell to a particular buyer.

**Non-existence of transport costs:** Perfectly competitive market also assumes the non-existence of transport costs.

**Perfect mobility of factors of production:** Factors of production must be in a position to move freely into or out of industry and from one firm to the other.

**5. a. Describe the Law of returns to scale.**

5M

*Describing with possible situations – 5M*

The law of returns to scale explains the behavior of the total output in response to change in the scale of the firm, i.e., in response to a simultaneous to changes in the scale of the firm, i.e., in response to a simultaneous and proportional increase in all the inputs. More precisely, the Law of returns to scale explains how a simultaneous and proportionate increase in all the inputs affects the total output at its various levels.

The concept of variable proportions is a short-run phenomenon as in these period fixed factors can not be changed and all factors cannot be changed. On the other hand in the long-term all factors can be changed as made variable.

When we study the changes in output when all factors or inputs are changed, we study returns to scale. When a firm expands, its scale increases all its inputs proportionally, then technically there are three possibilities.

- (i) The total output may increase proportionately
- (ii) The total output may increase more than proportionately
- (iii) The total output may increase less than proportionately.

**5. b. What is BEP? Explain with a neat diagram.**

5M

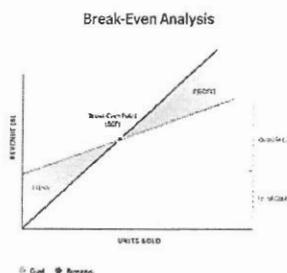
*Definition of BEP – 2M*

*Explanation with diagram – 3M*

Break Even Point refers to the point where total cost is equal to total revenue. It is a point of no profit, no loss. This is also a minimum point of no profit, no loss.

$$\text{Break Even Point (Units)} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$$

$$\text{Break even sales revenue} = \text{BEP(Units)} \times \text{selling price per unit}$$



In its narrow sense, it is concerned with finding out BEP; BEP is the point at which total revenue is equal to total cost. It is the point of no profit, no loss. In its broad determine the probable profit at any level of production. This is also a minimum point of production where total costs are recovered. If sales go up beyond the Break Even Point, organization makes a profit. If they come down, a loss is incurred.

### UNIT-III

#### **6. a. Define Partnership. Explain the merits and demerits of partnership.**

**5M**

*Definition– 2M                      merits and demerits – 3M*

Partnership is an improved form of sole trader in certain respects. Where there are like-minded persons with resources, they can come together to do the business and share the profits/losses of the business in an agreed ratio. Persons who have entered into such an agreement are individually called 'partners' and collectively called 'firm'. The relationship among partners is called a partnership.

#### **Merits:**

**Easy to form:** Once there is a group of like-minded persons and good business proposal, it is easy to start and register a partnership.

**Availability of larger amount of capital:** More amount of capital can be raised from more number of partners.

**Division of labour:** The different partners come with varied backgrounds and skills. This facilitates division of labour.

**Flexibility:** The partners are free to change their decisions, add or drop a particular product or start a new business or close the present one and so on.

**Personal contact with customers:** There is scope to keep close monitoring with customers requirements by keeping one of the partners in charge of sales and marketing. Necessary changes can be initiated based on the merits of the proposals from the customers.

**Quick decisions and prompt action:** If there is consensus among partners, it is enough to implement any decision and initiate prompt action. Sometimes, it may take more time for the partners on strategic issues to reach consensus.

**The positive impact of unlimited liability:** Every partner is always alert about his impending danger of unlimited liability. Hence he tries to do his best to bring profits for the partnership firm by making good use of all his contacts.

#### **Demerits:**

**Formation of partnership is difficult:** Only like-minded persons can start a partnership. It is sarcastically said, 'it is easy to find a life partner, but not a business partner'.

**Liability:** The partners have joint and several liabilities beside unlimited liability. Joint and several liability puts additional burden on the partners, which means that even the personal properties of the partner or partners can be attached. Even when all but one partner become insolvent, the solvent partner has to bear the entire burden of business loss.

**Lack of harmony or cohesiveness:** It is likely that partners may not, most often work as a group with cohesiveness. This results in mutual conflicts, an attitude of suspicion and crisis of confidence. Lack of harmony results in delay in decisions and paralyses the entire operations.

**Limited growth:** The resources when compared to sole trader, a partnership may raise little more. But when compared to the other forms such as a company, resources raised in this form of organization are limited. Added to this, there is a restriction on the maximum number of partners.

**Instability:** The partnership form is known for its instability. The firm may be dissolved on death, insolvency or insanity of any of the partners.

**Lack of Public confidence:** Public and even the financial institutions look at the unregistered firm with a suspicious eye. Though registration of the firm under the Indian Partnership Act is a solution of such problem, this cannot revive public confidence into this form of organization overnight. The partnership can create confidence in other only with their performance

**6. b. Describe the importance and drawbacks of public sector enterprises. 5M**  
*importance – 3M                      Drawbacks – 2M*

**Importance:**

Setting up a number of public enterprises in basic and key industries

Generating considerably large employment opportunities in skilled, unskilled, supervisory and managerial cadres.

Creating internal resources and contributing towards national exchequer for funds for development and welfare.

Bringing about development activities in backward regions, through locations in different areas of the country.

Assisting in the field of export promotion and conservation of foreign exchange.

Creating financial systems, through a powerful networking of financial institutions, development and promotional institutions, which has resulted in social control and social orientation of investment, credit and capital management systems.

Benefiting the rural areas, priority sectors, small business in the fields of industry, finance, credit, services, trade, transport, consultancy and so on.

**Drawbacks:**

Low efficiency and productivity

Political interference

Poor financial performance

Bureaucratic delays

**7. What is the impact of Liberalization in Indian business environment? 10M**  
*Explanation of various – 10M*

**Positive Impacts:**

**Growth of Private Sector:** Liberalization reduced the dominance of the public sector, boosting entrepreneurship and private investment.

**Inflow of Foreign Investment:** Increased FDI and FII (Foreign Institutional Investment) inflows brought capital, technology, and expertise.

**Improved Efficiency and Productivity:** Competition led businesses to adopt better technology, modern management, and cost-effective practices.

**Expansion of Indian Companies:** Indian firms like Infosys, Tata, Reliance expanded globally due to relaxed trade and investment policies.

**Boom in Service Sector:** IT, telecom, retail, and financial services experienced rapid growth and became major job creators.

**Consumer Benefits:** Availability of high-quality goods and services. More choices and competitive prices for consumers.

**Better Infrastructure and Technology:** Liberalization facilitated modernization in sectors like telecom, aviation, and automotive.

**Negative Impact:**

**Jobless Growth:** Industrial and service sector growth did not proportionately create employment.

**Small-Scale Industries (SSIs) Struggled:** Influx of foreign goods affected local and traditional industries.

**Increased Inequality:** Rich got richer; poor remained poor or got poorer in many regions.

**Dependence on Global Market:** Vulnerability to global recessions and market fluctuations increased.

**Neglect of Agriculture Sector:** Reforms mostly focused on industrial and service sectors, sidelining farmers and rural development.

**UNIT-IV**

**8. Explain the functions of Financial Management.**

**10M**

*Explaining any 4 functions 2.5 x 4 functions = 10M*

**a) Investment Decisions:** Concerned with deciding where to invest funds to maximize returns. Involves capital budgeting (long-term investment) and working capital management (short-term investment).

**b) Financing Decisions:** Determines the sources of funds (equity, debt, loans, retained earnings). Balances debt and equity to maintain financial stability and growth.

**c) Dividend Decisions:** Decides how much profit should be distributed as dividends and how much should be retained for reinvestment. Affects shareholder satisfaction and future business expansion.

**d) Liquidity Management:** Ensures that the firm has enough cash flow to meet short-term obligations. Involves maintaining an optimal level of working capital.

**9. a. Describe the process of calculating compound interest with example.**

**5M**

*Explanation – 3M Example – 2M*

When interest is calculated on total of previously earned interest and the original principal it compound interest

$$FV_n = P \left(1 + \frac{r}{m}\right)^{n \cdot m}$$

Where, P = principal

r = interest rate

n = time period

m = number of times compounded per year

Example: Rs 5,000 is invested at annual rate of interest of 12%. What is the amount after 6 years if the compounding is done 4 times a year?

Given : P = 5000 , r = 12%, n = 6 years, m = 4 times a year

$$FV_n = P \left(1 + \frac{r}{m}\right)^{n \cdot m}$$

$$\text{Future value after 6 Years} = 5000 \left(1 + \frac{0.12}{4}\right)^{6 \cdot 4} = 10163$$

**9. b. What is double entry system? Explain the importance of system.**

**5M**

*Explanation – 3M      Importance – 2M*

In the double-entry accounting system, transactions are recorded in terms of debits and credits. Since a debit in one account offsets a credit in another, the sum of all debits must equal the sum of all credits.

**Importance:**

1. A double-entry system provides a check and balance for each transaction, which helps ensure accuracy and prevent fraud.
2. This accounting system also allows to track business finances more effectively and make better decisions about where to allocate your resources.
3. Gaining a clear picture of a company's financial position
4. Detecting errors and fraud more easily
5. Having useful knowledge for making decisions
6. Knowing the financial health of a business

#### UNIT-V

**10. Explain types of Depreciations.**

**10M**

*Definition – 1M explanation of any 3 types – 3X3 = 9M*

Depreciation is the reduction in the value of an asset over time due to wear and tear, obsolescence, or usage. It is recorded as an expense in accounting.

There are several methods of accounting depreciation fund. These are as follows:

1. Straight line method of depreciation
2. Declining balance method of depreciation
3. Sum of the years—digits method of depreciation
4. Sinking-fund method of depreciation

**Straight line method of depreciation:** A fixed sum is charged as the depreciation amount throughout the lifetime of an asset such that the accumulated sum at the end of the life of the asset is exactly equal to the purchase value of the asset. Here, we make an important assumption that inflation is absent. Service output method of depreciation

The formulae for depreciation and book value are as follows:

$$D_t = \frac{(P - F)}{n}$$

$$B_t = B_{t-1} - D_t = P - t \left[ \frac{(P - F)}{n} \right]$$

**Declining balance method of depreciation:** A constant percentage of the book value of the previous period of the asset will be charged as the depreciation amount for the current period.

This approach is a more realistic approach, since the depreciation charge decreases with the life of the asset which matches with the earning potential of the asset. The book value at the end of the life of the asset may not be exactly equal to the salvage value of the asset. This is a major limitation of this approach.

The formulae for depreciation and book value are as follows:

$$D_t = K * B_{t-1}$$

$$B_t = B_{t-1} - D_t = B_{t-1} - K * B_{t-1} = B_{t-1}(1 - K)$$

**Sum of the years—digits method of depreciation:** In this method of depreciation also, it is assumed that the book value of the asset decreases at a decreasing rate. If the asset has a life of eight years, first the sum of the years is computed as

$$\text{Sum of Years} = 1+2+3+4+5+6+7+8=36 = n(n+1)/2$$

The rate of depreciation charge for the first year is assumed as the highest and then it decreases. The rates of depreciation for the years 1–8, respectively are as follows: 8/36, 7/36, 6/36, 5/36, 4/36, 3/36, 2/36, and 1/36.

For any year, the depreciation is calculated by multiplying the corresponding rate of depreciation with (P – F)

$$D_t = \text{Rate}(P - F)$$

$$B_t = B_{t-1} - D_t$$

**10. Explain different methods of Capital budgeting techniques.**

**10M**

*Explanation of 4 types – 2.5X4 = 10M*

The capital budgeting is the process of evaluating the relative worth of long-term investment proposals based on their respective profitability

The capital budgeting appraisal methods are techniques of evaluation of investment proposal. These methods provide the company a set of norms on the basis of which either it has to accept or reject the investment proposal.

They are grouped under two categories.

1. Traditional methods
2. Discounted Cash flow methods

#### **1. Traditional Methods:**

A. Pay-back period method: The pay back period is the number of years it takes the firm to recover its original investment by net returns before depreciation, but after taxes. This period is calculated by dividing the cost of the project by the annual earnings after tax but before depreciation. Under this method the projects are ranked on the basis of the length of the payback period. A project with the shortest payback period will be given the highest rank and taken as the best investment.

$$\text{Pay back period} = \frac{\text{Cash outlay (or) original cost of project}}{\text{Annual cash inflow}}$$

B. Accounting (or) Average rate of return method (ARR): It is an accounting method, which uses the accounting information repeated by the financial statements to measure the probability of an investment proposal.

According to 'Soloman', accounting rate of return on an investment can be calculated as the ratio of accounting net income to the initial investment. It can be determined by dividing the average income after taxes by the average investment i.e., the average book value after depreciation.

***ARR=(Average net income after taxes)/(Average Investment)***

$$\text{Average net income after taxes} = \frac{\text{Total Income after Taxes}}{\text{No. Of Years}}$$

**2. Discounted cash flow methods**

- A. Net present value method (NPV):** The Net Present Value (NPV) method considers the time value of money by discounting future cash flows to their present values using a predetermined required rate of return. NPV is calculated as the difference between the present value of future cash inflows and the initial cost of the investment. Only projects with a positive NPV are considered, and the project with the highest positive NPV is selected. The Net Present Value (NPV) technique is used to evaluate investment projects.
- B. Internal Rate of Return Method (IRR):** The ultimate goal of IRR is to identify the rate of discount, which makes the present value of the sum of annual nominal cash inflows equal to the initial net cash outlay for the investment. Several methods can be used when seeking to identify an expected return, but IRR is often ideal for analyzing the potential return of a new project that a company is considering undertaking. IRR is ideal for analyzing capital budgeting projects to understand and compare potential rates of annual return over time. In addition to being used by companies to determine which capital projects to use, IRR can help investors determine the investment return of various assets.

