9. Mr. X has receive Rs. 2,000 per year for 5 years. Calculate the present value of an annuity assuming that he can earn interest on his investment at 10% P.A. (Answer : Rs. 7,582).

10. Calculate the present value of Rs. 1,000 received in perpetuity for an infinite period, taking discount rate of 10% (Answer : Rs. 10,000).

5.8 GLOSSARY

1.	Annuity	:	Series of periodic cash flows.
2.	Compounding	:	Process of determining the final value of an amount when compound interest applies.
3.	Discounting	:	Process of finding the present value of a future cash flow of a series of future cash flows.
4.	Risk	:	Variability, measured by standard duration or beta coefficient.
5.	Risk adjusted	:	Discount rate applicable to a risky investment. It is equal to risk free rate of return plus a risk premium reflecting the risk characterising the investment.

5.9 BOOKS FOR FURTHER READING

1.	James C. Van Horne	:	Financial Management and Policy" Eastern Economy Edition, Prentice Hall of India Pvt. Ltd.
2.	I.M. Pandey	:	"Financial Management", Vikas Publishing House (P) Ltd.
3.	P.V. Kulkarni	:	"Financial Management", Himalaya Publishing House.
4.	R.K. Sharma & Shashi K. Gupta	:	"Financial Management", Kalyani Publishers.

Unit : III **Lesson : 6**

INTRODUCTION TO CAPITAL BUDGETING

6.0 OBJECTIVES

After Studying this lesson, you should be able to : -

a) Explain the concept, nature and importance of Capital budgeting decision.

b) Describe the types of capital budgeting decisions.

c) Explain the Capital budgeting process.

STRUCTURE

6.1 INTRODUCTION

In the first lesson you have studied that the objective of financial management is to maximise the economic welfare of the shareholders. To achieve this, financial manager has to anticipate the financial needs of the firm, acquire the required funds, allocate the acquired funds in an effective manner and administer the funds to reach the targets. Among the financial decisions, allocation of funds or investment decision occupies prominent place. This lesson is intended to explain (a) the nature, meaning and importance of capital budgeting (b) Types and process of capital budgeting decision.

6.2 NATURE OF CAPITAL BUDGETING DECISION

The long term investment decision also popularly termed as Capital budgeting decision. It refers to the investment in projects whose results would be available only in the long run i.e. after one year. Examples are, the deployment of finances to purchase of land, building and machinery etc., The investments in these projects are quite heavy and to be made immediately, but the return will be available only after a period of time. The following are the some of the situations where long term investment may be necessary.

6.2.1 (a) Expansion

A firm may have to expand its production capacity on account of high demand for its products and inadequate production capacity. This will need an additional capital investment.

6.2.2 (b). Diversification

A firm may be interested in diversifying (differentiating existing line of activity) its production to reduce risk by operating in several markets rather than in a single market. In such an event, long term investment may become necessary for purchase of new machinery and facilities to handle new products.

6.2.3 (c) Replacement and Modernisation

Replacement of fixed assets may become necessary on account of their being worn out or becoming out dated on account of new technology.

6.2.4 (d) Research and Development

A huge amount may have to be expended for research and development in case of those industries where technology is rapidly changing.

6.2.5 (e) Miscellaneous

A firm may have to invest money in projects which do not directly help in achieving profit oriented goals. For example, installation of pollution control equipment may be necessary on account of legal requirements.

6.3 MEANING OF CAPITAL BUDGETING

The long term investment decision of the firm is generally known as the capital budgeting or capital expenditure decision. A capital budgeting decision may be defined as " the firms decision to invest its current funds most efficiently in the long term assets anticipation ~~in~~ of an expected flow of benefits over a series of years".

From the above definition we can draw the following features of capital budgeting decision.

a. The exchange of current funds for future benefits.

b. The funds are invested in long term assets.

c. The futures benefits will occur to the firm over a series of years.

6.4 IMPORTANCE OF CAPITAL BUDGETING :

Capital budgeting decisions are among the most crucial and critical decisions and they have significant impact on the future profitability of the firm. Special care should be taken in making these decisions on account of the following reasons.

6.4.1 (i) Investment of heavy funds

Capital budgeting decision requires large amounts of funds. It is, therefore, necessary that the firm should carefully plan its investment programme as the resources are scarce to majority of the firms. The investment decision must be thoughtful wise and correct. Because a wrong or in correct decision would result in losses and the same prevents the firm from earning profits from other investments as well due to scarcity of resources.

6.4.2 (b) Long term implications

The effect of capital budgeting decision will be the long run on the future profitability and on the growth of the firm.

6.4.3 (c) Irreversible decisions

In most cases, capital budgeting decisions are irreversible. This is because it is very difficult to find a market for the capital assets. The only alternative will be to scrap the capital assets so purchased or sell them at substantial loss in the event of the decision being proved wrong.

6.4.4 (d) Most difficult to make

Capital budgeting decision requires estimation of future cash flows which are uncertain. It is difficult task to estimate probable future cashflows because, they will vary due to economic, Political, Social and technological factors.

On account of these reasons, capital budgeting decisions assumes greater importance among the business decisions.

6.5 TYPES OF CAPITAL BUDGETING

Capital budgeting projects may be classified as follows:

6.5.1 (a) Independent Projects :

These are the projects which do not compete with one another. Depending on the profitability of the projects and availability of funds, the company can undertake any number of projects.

6.5.2 (b) Mutually exclusive Projects

In case of mutually exclusive projects acceptance of one project rejects the other project. For example, if there are two projects A and B, either A or B should be accepted by the Company.

6.5.3 (c) Contingent Projects

These are dependent projects. Acceptance of one proposal depends on acceptance of one or more other proposals. For example, investment in machinery is dependent upon expansion of plant or replacement of old machinery.

6.6 CAPITAL BUDGETING DECISION MAKING PROCESS

The decision to commit funds in one or more projects requires the formulation of the project by following six sequential steps as under :

6.6.1 (a) Project Generation

A project is an investment proposal. The first step in capital budgeting decision making process is idea generation. The idea generation means identifying the potential areas where investments can be made. This work may be entrusted to a department or a committee within the organisation.

6.6.2 (b) Developing the alternatives

The next step in decision making process is developing the alternative investment proposals. For Example, if an organisation wants to replace the existing machinery, it has two alternatives. Either is can purchase an ordinary machinery or an automatic machinery.

6.6.3 (c) Evaluation of alternatives

This is the crucial stage where financial manager has to estimate the cash out flows required for proposed investment and expected benefits over a period of time for each alternative. The problem with estimation of cash flows is about certainty and uncertainty. The cash outflows (investment) required for an investment proposal can be estimated more or less accurately. But estimating cash inflows that are expected to be generated by the investment proposal involves risk and uncertainty as many factors are going to influence future profitability of the firm. After estimation of the cash flows, evaluation techniques are applied to study the relative profitability of the alternatives. Finally, a project report will be prepared and submitted to the top management by the finance manager stating costs and benefits involved in each alternative.

6.6.4 (d) Selection of the project

The next step is to select the alternatives by comparing the costs and benefits involved in each alternative. Generally this will be done by the top management or plant engineer or a committee appointed for this purpose.

6.6.5 (e) Implementation

The next and most crucial stage is immediate implementation of the selected proposal. Undue delays result in cost escalation so that the profitable project may turnout to be less profitable or unprofitable. To avoid delays in implementation the use of mathematical techniques like programme evaluation review techniques (PERT) and critical path method (CPM) are useful.

6.6.6 (f) Performance Review

A continuous monitoring of performance after the implementation of the project is imperative so that expected and actual operating results are compared. This helps in taking corrective action against responsible persons.

6.7 SUMMARY

The objective of financial management is to maximise the wealth of shareholders. To achieve this, the firms resources are to be allocated in an effective manner. Allocation of the firms current funds with an anticipation of future returns may be known as capital budgeting. Capital budgeting decision is one of the most important business decisions. It requires large amounts and will have an impact on the future profitability. Moreover, they are irreversible and most difficult to make. Capital budgeting decision process involves the identification of a project (potential area), evaluation and implementation.

6.8 SELF EXAMINATION QUESTIONS

1. What is the nature of Capital budgeting decision ?
2. Define the Capital Budgeting
3. Explain the importance of Capital Budgeting
4. Describe the types of capital budgeting projects
5. Explain the steps involved in capital budgeting decision making process.

6.9 GLOSSARY

Capital Budget : It is the firms formal plan for the expenditure of money for purchasing of fixed assets.

Diversification : Differentiating the existing line of activity

Mutually Exclusive : Acceptance of one alternative automatically rejects another.

Cash out flow : Expected amount required for an investment proposal.

6.10 : BOOKS FOR FURTHER READING

Vanhorne J.	:	Financial Management and policy, Prentice Hall of India
Hampton .,	:	Financial Decision Making, Prentice hall of India.
Pandey . I.M.,	:	Financial Management,, Vikas Publishers, New Delhi, 7th ed. 1995.
Maheshwari. S.N.,	:	Financial Management, Sultan Chand and Sons, New Delhi.
Khan & Jain	:	Financial Management, Tata Macgraw Hill Co., New Delhi.