

## UNIT: II- CAPITAL BUDGETING

### SHORT ANSWERS:

#### **Q.1. What are the characteristics of Capital Budgeting?**

The capital budgeting decisions are important, crucial and critical business decisions due to following reasons:

- **Substantial expenditure:** Capital budgeting decisions involves the investment of substantial amount of funds. It is therefore necessary for a firm to make such decisions after a thoughtful consideration so as to result in the profitable use of its scarce resources.
- **Long time period:** The capital budgeting decision has its effect over a long period of time. These decisions not only affect the future benefits and costs of the firm but also influence the rate and direction of growth of the firm.
- **Irreversibility:** Most of the investment decisions are irreversible. Once they are taken, the firm may not be in a position to reverse them back.
- **Complex decision:** The capital investment decision involves an assessment of future events, which in fact is difficult to predict. Further it is quite difficult to estimate in quantitative terms all the benefits or the costs relating to a particular investment decision.

#### **Q.2. Briefly explain the Capital Budgeting Process.**

The extent to which the capital budgeting process needs to be formalised and systematic procedures established depends on the size of the organisation; number of projects to be considered; direct financial benefit of each project considered by itself; the composition of the firm's existing assets and management's desire to change that composition; timing of expenditures associated with the projects that are finally accepted.

(i) Planning (ii) Evaluation (iii) Selection (iv) Implementation (v) Control (vi) Review

#### **Q.3. Write short notes on the kinds of capital budgeting decisions.**

Generally capital investment decisions are classified in two ways:

**A. On the basis of firm's existence:** The capital budgeting decisions are taken by both newly incorporated firms as well as by existing firms. These decisions may be classified as follows:

**(i) Replacement and Modernisation decisions:** The replacement and modernisation decisions aim at to improve operating efficiency and to reduce cost.

**(ii) Expansion decisions:** Existing successful firms may experience growth in demand of their product line, they may consider proposal to add capacity to existing product line.

**(iii) Diversification decisions:** These decisions require evaluation of proposals to diversify into new product lines, new markets etc. for reducing the risk of failure by dealing in different products or by operating in several markets.

**B. On the basis of decision situation:** The capital budgeting decisions on the basis of decision situation are classified as follows:

**(i) Mutually exclusive decisions:** The decisions are said to be mutually exclusive if two or more alternative proposals are such that the acceptance of one proposal will exclude the acceptance of the other alternative proposals.

**(ii) Accept-reject decisions:** The accept-reject decisions occur when proposals are independent and do not compete with each other. The firm may accept or reject a proposal on the basis of a minimum return on the required investment.

**(iii) Contingent decisions:** The contingent decisions are dependable proposals. The investment in one proposal requires investment in one or more other proposals.

#### **Q.4. Name the various methods of capital budgeting.**

In order to maximise the return to the shareholders of a company, it is important that the best or most profitable investment projects are selected. Because the results for making a bad long-term investment decision can be both financially and strategically devastating, particular care needs to be taken with investment project selection and evaluation. There are a number of techniques available for appraisal of investment proposals and can be classified below:

##### **A. Traditional or Non-Discounting methods:**

- (i) Payback Period Method.
- (ii) Accounting Rate of Return Method.

##### **B. Time Adjusted or Discounted Cash Flows Methods:**

- (i) Net Present Value Method.
- (ii) Internal Rate of Return Method.
- (iii) Profitability Index Method.

#### **Q.5. Write a short note on Pay- back period.**

Payback period is one of the non-discounted cash flow methods of capital budgeting. Pay-back period is the time required to recover the initial investment in a project.

$$\text{Pay - back period} = \frac{\text{Initial investment}}{\text{Annual cash inflows}}$$

##### **Merits of Pay-back method**

- It is easy to calculate and simple to understand.
- Pay-back method provides further improvement over the accounting rate return.
- Pay-back method reduces the possibility of loss on account of obsolescence.

##### **Demerits of Pay-back method**

- It ignores the time value of money.
- It ignores all cash inflows after the pay-back period.
- It is one of the misleading evaluations of capital budgeting.

#### **Q.6. What is Accounting Rate of Return.**

Accounting rate of return means the average rate of return or profit taken for considering the project evaluation. This method is one of the traditional methods for evaluating the project proposals.

$$\text{Accounting rate of return} = \frac{\text{Average annual net income}}{\text{Investment}}$$

### **Merits of Accounting Rate of Return method:**

- It is easy to calculate and simple to understand.
- It is based on the accounting information rather than cash inflow.
- It is not based on the time value of money.
- It considers the total benefits associated with the project.

### **Demerits of Accounting Rate of Return method:**

- It ignores the time value of money.
- It ignores the reinvestment potential of a project.
- Different methods are used for accounting profit.

### **Accept/Reject criteria**

If the actual accounting rate of return is more than the predetermined required rate of return, the project would be accepted. If not, it would be rejected.

### **Q.7. Explain Net Present Value.**

#### **NET PRESENT VALUE METHOD**

The net present value method is a modern method of evaluating investment proposals. This method takes into consideration the time value of money.

The present values of all inflows and outflows of cash occurring during the entire life of the project is determined separately for each year by discounting these flows by the firm's cost of capital or a pre-determined rate.

***“NET PRESENT VALUE IS THE DIFFERENCE BETWEEN THE TOTAL PRESENT VALUE OF FUTURE CASH INFLOWS AND THE TOTAL PRESENT VALUE OF FUTURE CASH OUTFLOWS.”***

#### **Merits of Net Present Value Method:**

- It recognizes the time value of money.
- It considers the total benefits arising out of the proposal.
- It is the best method for the selection of mutually exclusive projects.
- It helps to achieve the maximization of shareholders' wealth.

#### **Demerits of Net Present Value Method:**

- It is difficult to understand and calculate.
- It needs the discount factors for calculation of present values.
- It is not suitable for the projects having different effective lives.

### **Q.8. What is Profitability Index?**

#### **PROFITABILITY INDEX METHOD OR BENEFIT COST RATIO**

It is a time -adjusted method of evaluating the investment proposals. Profitability index also called as Benefit Cost Ratio (B/C) or 'Desirability factor' is the relationship between present value of cash inflows and the present value of cash outflows.

$$\text{Profitability Index} = \frac{\text{Present Value of Cash Inflows}}{\text{Present Value of Cash Outflows}}$$

The proposal is accepted if the profitability index is more than one and is rejected in case the profitability index is less than one. The profitability index method is most suitable, particularly when the costs of the projects differ significantly.

## Essay Questions:

### **Q.1. What do you understand by Capital Budgeting Process? Enumerate briefly the major steps involved in capital budgeting.**

#### **CAPITAL BUDGETING PROCESS**

The extent to which the capital budgeting process needs to be formalised and systematic procedures established depends on the size of the organisation; number of projects to be considered; direct financial benefit of each project considered by itself; the composition of the firm's existing assets and management's desire to change that composition; timing of expenditures associated with the projects that are finally accepted.

**(i) Planning:** The capital budgeting process begins with the identification of potential investment opportunities. Opportunities having little merit are rejected and promising opportunities are advanced in the form of a proposal to enter the evaluation phase.

**(ii) Evaluation:** This phase involves the determination of proposal and its investments, inflows and outflows. Investment appraisal techniques, ranging from the simple payback method and accounting rate of return to the more sophisticated discounted cash flow techniques, are used to appraise the proposals. The technique selected should be the one that enables the manager to make the best decision in the light of prevailing circumstances.

**(iii) Selection:** Considering the returns and risks associated with the individual projects as well as the cost of capital to the organisation, the organisation will choose among projects so as to maximise shareholders' wealth.

**(iv) Implementation:** When the final selection has been made, the firm must acquire the necessary funds, purchase the assets, and begin the implementation of the project.

**(v) Control:** The progress of the project is monitored with the aid of feedback reports. These reports will include capital expenditure progress reports, performance reports comparing actual performance against plans set and post completion audits.

**(vi) Review:** When a project terminates, or even before, the organisation should review the entire project to explain its success or failure. This phase, may have implication for firms planning and evaluation procedures. Further, the review may produce ideas for new proposals to be undertaken in the future.

### **Q.2. Explain briefly the following methods of capital budgeting bringing out the advantages and disadvantages of each: (a) Pay- back period method (b) Accounting Rate of Return method.**

In order to maximise the return to the shareholders of a company, it is important that the best or most profitable investment projects are selected. There are a number of techniques available for appraisal of investment proposals and can be classified below:

#### **I. Traditional or Non-Discounting methods:**

- (i) Payback Period Method.
- (ii) Accounting Rate of Return Method.

#### **II. Time Adjusted or Discounted Cash Flows Methods:**

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### ❖ PAYBACK PERIOD METHOD:

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#### **Accept/Reject criteria**

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**Q.3. "NPV method ensures maximization of wealth of the shareholders in the long run". Comment.**

### **NET PRESENT VALUE METHOD**

The net present value method is a modern method of evaluating investment proposals. This method takes into consideration the time value of money and attempts to calculate the return on investments by introducing the factor of time element. It recognises the fact that a rupee earned today is worth more than the same rupee earned tomorrow.

The present values of all inflows and outflows of cash occurring during the entire life of the project is determined separately for each year by discounting these flows by the firm's cost of capital or a pre-determined rate.

**“NET PRESENT VALUE IS THE DIFFERENCE BETWEEN THE TOTAL PRESENT VALUE OF FUTURE CASH INFLOWS AND THE TOTAL PRESENT VALUE OF FUTURE CASH OUTFLOWS.”**

**Merits of Net Present Value Method:**

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**Demerits of Net Present Value Method:**

- It is difficult to understand and calculate.
- It needs the discount factors for calculation of present values.
- It is not suitable for the projects having different effective lives.

**Q.4. “The virtue of IRR method is that it does not require the pre- calculation of the required rate of return”, Critically examine.**

**INTERNAL RATE OF RETURN METHOD**

The internal rate of return method is a modern technique of capital budgeting that takes into account the time value of money. It is also known as ‘time adjusted rate of return’, ‘discounted cash flow’, ‘discounted rate of return,’ ‘yield method,’ and ‘trial and error yield method.’

In the net present value method, the net present value is determined by discounting the future cash flows of a project at a predetermined or specified rate called the cut-off rate. But under the internal rate of return method, the cash flows of a project are discounted at a suitable rate by hit and trial method, which equates the net present value so calculated to the amount of the investment.

Under this method, since the discount rate is determined internally, this method is called as the internal rate of return method.

**The internal rate of return can be defined as that rate of discount at which the present value of cash-inflows is equal to the present value of cash outflows.**

**Merits of Internal Rate of Return Method:**

- It considers the time value of money.
- It takes into account the total cash inflow and outflow.
- It does not use the concept of the required rate of return.
- It gives the approximate/nearest rate of return.

**Demerits of Internal Rate of Return Method:**

- It involves complicated computational method.
- It produces multiple rates which may be confusing for taking decisions.
- It is assuming that all intermediate cash flows are reinvested at the internal rate of return.
- The results of NPV method and IRR method may differ when the projects under evaluation differ in their size, life and timings of cash flows.