Basis for Comparison of Alternatives

PRESENT WORTH AND FUTURE WORTH ANALYSIS

CONDITIONS FOR USING CASH FLOW APPROACH

- Cash flows are known
- Cash flows are in constant value rupees
- The interest rate is known
- Comparisons are made with before tax cash flows
- Comparisons do not include intangible consideration
- Comparison do not include consideration of availability of funds to implement alternatives.

EXAMPLE 1

Revenue dominated cash flows

The details of the feasibility report of a project are shown below. Check the feasibility of the project based on Present Worth Method if i=20%.

- Initial outlay- Rs.50,00,000
- Life of Project- 20 years
- Annual Equivalent Revenues- Rs.15,00,000
- Modernizing cost at the end of 10^{th} year- Rs.20,00,000
- Salvage value at the end of project life- Rs.5,00,000

EXAMPLE 2

Investment proposals A and B have the net cash flows as follows:

Proposal	End of Years				
	0	1	2	3	4
A (in ₹)	- 10,000	3,000	3,000	7,000	6,000
B (in ₹)	- 10,000	6,000	6,000	3,000	3,000

Compare the present worth of A with that of B at i=18%. Which proposal should be selected?

EXAMPLE 4

Cash dominated cash flows

A granite company is planning to buy a fully automated granite cutting machine. If it is purchased under down payment, the cost of the machine is Rs. 16,00,000. If it is under installment basis, the company has to pay 25% of the cost at the time of purchase and the remaining amount in ten equal installments of Rs. 2,00,000 each. Suggest the best alternative using present worth method if i= 18% compounded annually.

COMPARISON OF ASSETS HAVING UNEQUAL LIVES

Common multiple method (LCM)

- Assets A1 and A2 have the capability of satisfactorily performing a required function. Asset A2 has an initial cost of Rs.32000 and an expected salvage value of Rs.4000 at the end of its 4 years service life. Assets A1 costs 9000 less initially, with an economic life 1 year shorter than that of A2; but A1 has no salvage value, and its annual operating costs exceed those of A2 by 2500. When the required rate of return is 15% state which alternative is preferred.

STUDY PERIOD

- A new rock pit will be operated for a construction project that will last 5 years. Rock can be loaded from an elevated box loader served by a conveyor from the pit or by mobile shovel loaders.
- The box loader and conveyor have an initial cost of Rs.2,64,000 and will have no salvage value at the end of the project.
- Two shovel loaders each priced Rs.42,000 can provide the same capacity, but their operating costs together will be Rs.36,000 per year more than the box loader. Normal service life for a shovel loader is 3 years with zero salvage value, but a 2 year old machine can likely be sold for Rs.10,000. which alternative is preferred when the interest rate is 13%?

Example 7: Two types of trucks are available for transportation use. They are needed for 10 years. The details are.

	Truck A	Truck B
First cost	10,00,000	15,00,000
Estimated annual maintenance cost	20,000	15,000
Estimated life	5 years	10 years
Estimated salvage value	2,00,000	5,00,000

For the same numerical compare the alternatives using Future Worth Method.