Z Ltd is considering investing a Project

April 2018

2,50,000 - 25,000 - N.P.V (15 a)

Year	Cash Inflow	PV factor @ 10 %
1	1,50,000	0.909
2	1,50,000	0.826
3	1,30,000	0.751
4	1,30,000	0.683
5	90,000	0.621

Calculate 1) Payback Period 2) Discounted Payback Period 3) Rate of return on original investment.

April 2018 (20) 4) Rate of return on Average investment.

5) NPV 6) Excess Present value Index 7) IRR.

1) Calculation of

Year	Net Profit Cash Inflow	Present value @ 10 %	Present value of cash Inflow	Cumulative Cash Inflow.
1	1,50,000	0.909	1,36,350	1,36,350.
2	1,50,000	0.826.	1,23,900.	2,60,250.
3	1,30,000	0.751.	97,630.	3,57,880.
4	1,30,000	0.683.	88,790.	4,46,470.
5.	90,000	0.621.	55,890	5,02,360.

$$\text{Time Required} = \frac{\text{Required Amount}}{\text{Different Amount}} \times \text{Month.}$$

2,50,000 - 1,36,350 = 2,60,250 - 1,36,350 =

$$= \frac{1,13,650}{1,23,900} \times 12.$$

$$= 11 \text{ months.}$$

Payback Period = 1 year 11 months

2)

Year	Cash Inflow	Cumulative cash Inflow.
1	1,50,000	1,50,000.
2	1,50,000	3,00,000.
3	1,30,000	4,30,000.
4	1,30,000	5,60,000.
5.	90,000	6,50,000.

$$\text{Time Required} = \frac{\text{Required Amount}}{\text{Difference Amount}} \times \text{month.}$$

$$= \frac{1,00,000}{1,50,000} \times 12.$$

$$= 8 \text{ months.}$$

Payback Period = 1 year 8 months.

3) Calculation Rate of return on Original Investment

$$\text{Accounting Rate of Return} = \frac{\text{Average Profit}}{\text{Original Avg Investment}} \times 100.$$

$\frac{6,50,000}{5}$

$$= \frac{1,30,000}{2,50,000} \times 100.$$

$$= 52\%$$

Accounting Rate of Return = 52 %.

4) calculation Rate of return on Average Investment

$$\text{Accounting Rate of Return} = \frac{\text{Average Profit}}{\text{Average Investment}} \times 100.$$

$$= \frac{1,30,000}{1,25,000} \times 100.$$

$$= 104\%$$

Accounting Rate of Return = 104 %.

5) Calculation of Net present value :-

Net present value = Present value of Cash Inflow − Present value of Cash outflow.

= 5,02,360 − 2,50,000.

= Rs. 2,52,360.

Net present value = Rs. 2,52,360.

6) Calculation of excess Net present value :-

$$\text{Profitability Index} = \frac{\text{Present value of cash Inflow}}{\text{Present value of cash outflow}} \times 100$$

$$= \frac{5,02,360}{2,50,000}$$

= 201 %

Profitability Index = 201 %

7) Calculation of Internal Rate of Return

$$\text{Internal Rate of Return} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}}$$

$$= \frac{2,50,000}{1,30,000.}$$

= 1.92