Capital Budgeting Numerical

Pay Back Period and Discounted Pay Back Period:

Q .1: Shivangi Crafts Ltd. is planning major investment to expand its current manufacturing of cotton yarn with initial cash outlays of Rs. 330 lakhs. The finance department has projected a following cash flows over the next 7 years considered to be life of the project.

Year	0	1	2	3	4	5	6	7
Cash Flow (Rs. Lakh)	-330	90	120	380	420	310	240	60

a) What is the payback period of the project?
b) What is the discounted payback period assuming that discount rate is 15%?

Q.2 (Practice):

A company is considering a new project for which Rs. 10,00,000 requires for an investment. The forecasted cash flows for 5 years are mentioned below:

Year	1	2	3	4	5
Cash Flow (Rs. in 000)	150	200	350	450	220

a) Calculated the payback period of the project?
b) Also calculate the discounted payback period if the discount rate is 10%.

Discounted PBP, PI and NPV of Single Project

Que 3: A firm considering a project which requires an initial investment of Rs. 10,00,000. The expected cash inflows are given below:

Year	1	2	3	4	5	6
Cash Flow (Rs.)	1,50,000	2,00,000	3,00,000	4,50,000	5,00,000	4,00,000

Calculated the discounted payback period, Net present value and Profitability Index. Consider 12% discount factor.

Que 4 (Practice): After conducting a survey, X ltd decided to undertake a project for placing a new product on the market. It was estimated that the project would cost of Rs. 20,00,000. The company cut off rate is 14%.

The expected cash inflows are given below:

Year	1	2	3	4	5	6	7
Cash Flow (Rs.)	3,00,000	4,20,000	5,00,000	7,50,000	8,00,000	6,00,000	2,50,000

Ascertain the discounted payback period, Net present value and Profitability Index.

Pay Back, Discounted Payback, NPV, PI and IRR:

Q. 5: Zebra Rolling Ltd. is considering a two mutually exclusive projects to produce iron ingot with in initial investment of Rs. 15 crores. Opportunity cost of capital is 14%. The cash flow (Rs. In crore) expected from the two projects is as follows:

Year	1	2	3	4	5	6	7
Project A Cash flows (Cr. in Rs)	4	4	3	4	5	4	2
Project B Cash flows (Cr. in Rs)	3	4	4	5	6	3	2

You are required to calculated the following:

a. Pay back period of each project.
b. Discounted pay back of each project.
c. Net Present Value of each project
d. Profitability Index of each project.
e. IRR of each project.

Que 6 (Practice):

A firm has two investment opportunities, each costing Rs. 30,00,000 and each having estimated cash inflows as shown below:

Year	**Cash Inflows (in Rs.)**	
	Project X	**Project Y**
1	500000	500000
2	700000	650000
3	850000	850000
4	940000	1000000
5	1050000	1100000
6	900000	700000

Both the projects are mutually exclusive.

After giving due consideration to the risk criteria in each project, the management has decided to evaluate the both the project at a 11% cost of capital.

Ascertain the following:

a. What is the Pay back period of each project?
b. Calculate the discounted pay back of each project.
c. Compare the Net Present Value of each project
d. Profitability Index of each project.
e. IRR of each project.

IRR (One Project)

Que 7:

A company has an investment opportunity costing of Rs. 4,00,000 with the following expected net cash inflows:

Year	1	2	3	4	5	6	7	8	9	10
CIFs (Rs.)	70,000	70,000	70,000	70,000	70,000	80,000	1,00,000	1,50,000	1,00,000	40,0000

Determine the IRR, if discount rate is 10%

Que 8 (Practice):

A company is considering an investment proposal of 10,00,000 to install new milling controls. The estimated cash flows from the proposed investment proposal is as follows:

Year	1	2	3	4	5	6	7
CIFs (Rs.)	1,50,000	2,50,000	3,20,000	3,00,000	2,80,000	2,20,000	1,40,000

Calculate IRR, when the cost of capital is 11%.

NPV and Profitability Index

Que 9: The initial cash outlay of a project is Rs. 5,00,000 and it generates cash inflows of Rs. 1,00,000; Rs. 2,00,000; Rs. 3,00,000 and Rs 1,00,000. Assume 10% discount rate of discount. Find Net present value and Profitability Index.

Que 10 (Practice): Following details of a project are given by a firm:

Initial Investment: Rs. 15,00,000

Year	1	2	3	4	5	6	7
CIFs (Rs.)	1,70,000	2,90,000	3,70,000	4,40,000	5,00,000	3,80,000	2,40,000

The cost of capital or discount rate is 11%. Find out the NPV and profitability Index and suggest whether the project should be accepted or rejected.