| 1a).Net Present Value of The project = Present Value of Inflows- Intial Investment |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Particulars/ye | 0 | 1 | 2 | 3 | 4 | 5 |
| Intial Investment | 10000000 |  |  |  |  |  |
| Working | 300000 |  |  |  |  |  |
| Revenue | 0 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| Cash Fixed Cost |  | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 |
| Cash Varible cost |  | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 |
| Depreciation |  | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 |
| Gross Profit |  | 5,000,000 | 5,000,000 | 5,000,000 | 5,000,000 | 5,000,000 |
| Tax |  | 1,700,000 | 1,700,000 | 1,700,000 | 1,700,000 | 1,700,000 |
| Net Profit |  | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 |
| Cash Inflow |  | 5,300,000 | 5,300,000 | 5,300,000 | 5,300,000 | 5,300,000 |
| Discounting Rate |  | 0.909090909 | 0.826446281 | 0.751314801 | 0.683013455 | 0.620921323 |
| Present value |  | 4,818,182 | 4,380,165 | 3,981,968 | 3,619,971 | 3,290,883 |
| Total Present Value of the Inflows for 5 Years Add: Present value of Working capital |  |  |  | 20091169.88 |  |  |
|  |  |  |  | 186276 |  |  |
| Add: Present value of Working capital |  |  |  | 20277445.88 |  |  |
| Therefore, NPV of Project = \$9,977,446 |  |  |  |  |  |  |
| NPV of the project is positive. It is expected to create the wealth for Blinkerai Limited, so it must be accpected. |  |  |  |  |  |  |

## b). SENSITIVITY ANALYSIS

Sensitivity analysis of NPV with respect to no.of units sold.
To compute the breakeven point, NPV=0

$$
\text { PVIFA(10\%,5)*CF + 186276- Initial Investment= } 0
$$

PVIFA $=3.790787$

$$
\begin{aligned}
& 3.790787 * c f+186276-10300000=0 \\
& \mathrm{cf}=\quad 2667974.75
\end{aligned}
$$

Margin of Safe
50

This means, if there is unfavourable deviation of $50 \%$ in CF, then NPV would be negative.
So, now NPV Is calculated with decrease in $10 \%$ of units.

| Particulars/y | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Intial <br> Investment | 10000000 |  |  |  |  |  |
| Working | 300000 |  |  |  |  |  |
| Revenue | 0 | $9,000,000$ | $9,000,000$ | $9,000,000$ | $9,000,000$ | $9,000,000$ |
| Cash Fixed Cost | $1,000,000$ | $1,000,000$ | $1,000,000$ | $1,000,000$ | $1,000,000$ |  |
| Cash Varible cost | $1,800,000$ | $1,800,000$ | $1,800,000$ | $1,800,000$ | $1,800,000$ |  |
| Depreciation |  | $2,000,000$ | $2,000,000$ | $2,000,000$ | $2,000,000$ | $2,000,000$ |
| Gross Profit |  | $4,200,000$ | $4,200,000$ | $4,200,000$ | $4,200,000$ | $4,200,000$ |
| Tax |  | $1,428,000$ | $1,428,000$ | $1,428,000$ | $1,428,000$ | $1,428,000$ |
| Net Profit |  | $2,772,000$ | $2,772,000$ | $2,772,000$ | $2,772,000$ | $2,772,000$ |


| Cash Inflow | 4,772,000 | 4,772,000 | 4,772,000 | 4,772,000 | 4,772,000 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Discounting Rate | 0.909090909 | 0.826446281 | 0.751314801 | 0.683013455 | 0.620921323 |
| Present value | 4,338,182 | 3,943,802 | 3,585,274 | 3,259,340 | 2,963,037 |
| Total Present Value of the Inflows for 5 Years |  |  | 18089634.46 |  |  |
| Add: Present value of Working capital |  |  | 186276 |  |  |
|  |  |  | 18275910.46 |  |  |
| Therefore, NPV of Project = \$7,975,910 |  |  |  |  |  |
| There is unfavourable deviation 10\% in units, but NPV is still positive. |  |  |  |  |  |


| c). SCENARIO ANALYSIS. <br> NPV in the Based Case scenario |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Particulars/Y¢ | 0 | 1 | 2 | 3 | 4 | 5 |
| Intial <br> Investment | 10000000 |  |  |  |  |  |
| Working | 300000 |  |  |  |  |  |
| Revenue | 0 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| Cash Fixed Cost |  | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 |
| Cash Varible Cost |  | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 |
| Depreciation |  | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 | 2,000,000 |
| Gross Profit |  | 5,000,000 | 5,000,000 | 5,000,000 | 5,000,000 | 5,000,000 |
| Tax |  | 1,700,000 | 1,700,000 | 1,700,000 | 1,700,000 | 1,700,000 |
| Net Profit |  | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 | 3,300,000 |
| Cash Inflow |  | 5,300,000 | 5,300,000 | 5,300,000 | 5,300,000 | 5,300,000 |
| Discounting Rate |  | 0.909090909 | 0.826446281 | 0.751314801 | 0.683013455 | 0.620921323 |
| Present value |  | 4,818,182 | 4,380,165 | 3,981,968 | 3,619,971 | 3,290,883 |

Total Present Value of the Inflows for 5 Years
Add: Present value of Working capital

$$
\begin{array}{r}
20,091,170 \\
186,276 \\
\hline 20,277,446
\end{array}
$$

Therefore, NPV of Project $=\$ 9,977,446$

NPV in the worst case scenario

| Particulars/Y | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Intial <br> Investment | 10000000 |  |  |  |  |  |
| Working | 300000 |  |  |  |  |  |
| Revenue | 0 | $6,300,000$ | $6,300,000$ | $6,300,000$ | $6,300,000$ | $6,300,000$ |
| Cash Fixed Cost | $1,200,000$ | $1,200,000$ | $1,200,000$ | $1,200,000$ | $1,200,000$ |  |
| Cash Varible Cost | $1,540,000$ | $1,540,000$ | $1,540,000$ | $1,540,000$ | $1,540,000$ |  |
| Depreciation |  | $2,000,000$ | $2,000,000$ | $2,000,000$ | $2,000,000$ | $2,000,000$ |
| Gross Profit |  | $1,560,000$ | $1,560,000$ | $1,560,000$ | $1,560,000$ | $1,560,000$ |
| Tax |  | 530,400 | 530,400 | 530,400 | 530,400 | 530,400 |
| Net Profit |  | $1,029,600$ | $1,029,600$ | $1,029,600$ | $1,029,600$ | $1,029,600$ |
| Cash Inflow |  | $3,029,600$ | $3,029,600$ | $3,029,600$ | $3,029,600$ | $3,029,600$ |


| Discounting Rate | 0.909090909 | 0.826446281 | 0.751314801 | 0.683013455 | 0.620921323 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Present value | $2,754,182$ | $2,503,802$ | $2,276,183$ | $2,069,258$ | $1,881,143$ |

Total Present Value of the Inflows for 5 Years
Add: Present value of Working capital

11,484,568
186,276
11,670,844

Therefore, NPV of Project = $\quad \$ 1,370,844$

NPV in the best case scenario.

| Particulars/Y $¢$ | $\mathbf{0}$ | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Intial |  |  |  |  |  |  |
| Investment | 10000000 |  |  |  |  |  |
| Working | 300000 |  |  |  |  |  |
| Revenue | 0 | $15,600,000$ | $15,600,000$ | $15,600,000$ | $15,600,000$ | $15,600,000$ |
| Cash Fixed Cost | 900,000 | 900,000 | 900,000 | 900,000 | 900,000 |  |
| Cash Varible Cost | $2,340,000$ | $2,340,000$ | $2,340,000$ | $2,340,000$ | $2,340,000$ |  |
| Depreciation |  | $2,000,000$ | $2,000,000$ | $2,000,000$ | $2,000,000$ | $2,000,000$ |
| Gross Profit |  | $10,360,000$ | $10,360,000$ | $10,360,000$ | $10,360,000$ | $10,360,000$ |
| Tax | $3,522,400$ | $3,522,400$ | $3,522,400$ | $3,522,400$ | $3,522,400$ |  |
| Net Profit |  | $6,837,600$ | $6,837,600$ | $6,837,600$ | $6,837,600$ | $6,837,600$ |
| Cash Inflow |  | $8,837,600$ | $8,837,600$ | $8,837,600$ | $8,837,600$ | $8,837,600$ |
| Discounting Rate | 0.909090909 | 0.826446281 | 0.751314801 | 0.683013455 | 0.620921323 |  |
| Present value |  | $8,034,182$ | $7,303,802$ | $6,639,820$ | $6,036,200$ | $5,487,454$ |

Total Present Value of the Inflows for 5 Years
Add: Present value of Working capital

33,501,457
186,276
33,687,733

Therefore, NPV of Project $=\$ 23,387,733$

Since in question probabilty of each case is not given, it is taken as equal for all the cases i.,e, . $33 \%$ Therefore, probablity based weighted NPV = \$11,462,888

