

REPLACEMENT PROJECT

Objective :

- 1) Increase Capacity
- 2) Reduce cost
- 3) Increase quality of output

Tone :

Incremental principle $\rightarrow$ New - old.

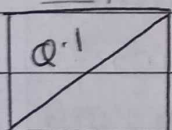
Thamela :

Depreciation & Capital Gain

$\swarrow$ $\downarrow$ $\searrow$
 Consider Ignore Block Concept.

$\downarrow$ $\downarrow$
 not advisable Does not come but
 still know the stuff

Imp...



Working Notes :-

W.N.1] Initial outflow -

(₹ in lakhs)

a) Cost of new machine	300
b) Post tax salvage value from old machines	79.44
Sale proceeds p. machine (12-0.6)	11.4
Book value p. machine $[18L \times 2/5]$	<u>7.2</u>
Capital Gain	4.2
Tax @ 35%	1.47
Post tax S.V. p. machine $(11.4 - 1.47)$	9.93
Post tax S.V. from 8 machines	79.44
c) Add ⁿ Working capital	50
d) Post tax lay off cost (9.21×0.65)	5.9865
Initial outflow (a-b+c+d)	<u>276.55</u>

In case of SLM method of deprn,
there would be no Capital Gain/
Loss → No Tax / (Tax Shield)

W.N.2] Terminal Flow -

(₹ in lakhs)

S.V. from new machine after 5 years	30
(-) S.V. from old machine forgone	(0)
	30
(+) Recovery of Working capital	50
Terminal Flow	80

W.N.3] Operating flow i.e. CFAT each year -

old machine ka 4th yr 5th yr 6th yr 7th yr 8th yr

Particulars	1	2	3	4	5
a) Incremental Revenue [(50-30) × 15]	300	300	300	300	300
b) Incremental Raw Material cost [55% of 50 × 15 - 60% of 30 × 15]	142.5	142.5	142.5	142.5	142.5
c) Savings in Labour Cost [22.8 - 5.82]	17.16	18.876	20.76	22.84	25.12
		(17.16 × 1.1)	(18.8 × 1.1)	(20.76 × 1.1)	(22.84 × 1.1)
d) Savings in maintenance Cost	15	15	30	30	30
	(22.5-7.5)	(22.5-7.5)	(67.5-37.5)	(67.5-37.5)	(67.5-37.5)
e) Incremental Insurance Cost (old - new) [(2% of 18 × 8) × (0.9) ³ = 2.1 - (2% of 300) = 6 → 3.9]	3.9	3.52	3.16	2.84	2.56
		(3.9 × 0.9)	(3.52 × 0.9)	(3.16 × 0.9)	(2.84 × 0.9)
f) Savings in Utility	2.5	2.5	2.5	2.5	2.5
g) Incremental Deprn $\left[\frac{300-30}{5} - \frac{18 \times 8}{5} \right]$	25.2	25.2	54	54	54
			old m/c 5 years me last 3 yr	years me me sirf new m/c....	deprn hoga
h) EBIT (a-b+c+d-e+f-g)	163.06	165.16	153.16	156	158.56
i) NOPAT @ 65%	105.99	107.36	99.84	101.4	103.06
j) CFAT (i+g)	131.9	132.55	153.84	155.4	157.06

→ Calculation of NPV -

Years	Net Cash Flow	Df @ 20%	Present Value	
0	(276.55)	1	(276.55)	
1	131.90	0.833	109.87	
2	132.55	0.694	91.99	
3	153.84	0.579	89.07	
4	155.40	0.482	74.90	
5	237.06	0.402	95.29	
	(157.06 + 80)			
			NPV = 184.67	

Q.2

① Initial Investment

Sales proceed	70
(-) Book Value	<u>(40)</u>
Capital Gain	30
Tax @ 30%	9
Post tax Salvage Value (70-9)	61
Cost of new machine	200
∴ Initial outflow (200 - 61)	<u>139</u>

② Terminal Flow :-

	New machine	old machine
a) S.V. after 5 years	80	0
b) B.V. after 5 years	65.54 $[200 \times (0.8)^5]$	13.1072 $[40 \times (0.8)^5]$
c) Capital Gain / (loss) (a) - (b)	14.46	(13.1072)
d) Tax / (Tax Shield) @ 30%	4.34	(3.93)
e) Post Tax S.V. (a-d)	75.66	3.93

$$\therefore \text{Terminal Flow} = 75.66 - 3.93 = 71.73$$

③ Operating Flow :-

Particulars	1	2	3	4	5
a) EBDIT	42	42	42	42	42
b) Incr ^{tl} . Depr ⁿ (20% WDV on ²⁰⁰⁻⁴⁰ 160L)	32	25.6	20.48	16.38	13.11
c) EBIT (a-b)	10	16.4	21.52	25.62	28.89
d) NOPAT @ 70%	7	11.48	15.06	17.93	20.22
e) CFAT (d+b)	39	37.08	35.54	34.31	33.33

Calculation of NPV :-

Years	Net Cash Flow	Df @ 13%	Present Value
0	(139)	1	(139)
1	39	0.885	34.52
2	37.08	0.783	29.03
3	35.54	0.693	24.63
4	34.31	0.613	21.03
5	105.06	0.543	57.05
	(33.33 + 71.73)		
			NPV = 27.25

→ Alternate Solution of Q.2] NB pg. 68

Using Block Concept -

(₹ in lacs)

Opening Value of the block (B.V.)

40

(+) Cost of new machine

200

240

(-) Sales proceeds of old machine

70

Closing Value of the block

170

[No capital Gain ... since the block is not yet over....]

① Initial Investment :-

Cost of new machine	200
(-) Sale Value of old machine	(70)
Initial outflow	<u>130</u>

② Terminal Flow :-

Particulars	New machine	old machine
a) Salvage Value after 5 years	80	0
b) B.V. after 5 years	55.7056 [$170 \times (0.8)^5$]	13.1072 [$40 \times (0.8)^5$]
c) Capital Gain / (Loss) = a - b	29.2944	(13.1072)
d) Tax / (Tax Shield) @ 30%	8.79	(3.93)
e) Post Tax S.V. (a-d)	71.21	3.93

$\therefore \text{Terminal Flow} = 71.21 - 3.93 = 67.28$

③ Operating Flow :-

	1	2	3	4	5
a) EBDIT	42	42	42	42	42
b) Incr ^{mtl} . Depr ⁿ (20% WDV on 130L) 170-40	26	20.8 (26×0.8)	16.64 (20.8×0.8)	13.31 (16.64×0.8)	10.65 (13.31×0.8)
c) EBIT (a-b)	16	21.2	25.36	28.69	31.35
d) NOPAT @ 70%	11.2	14.84	20.29	20.08	21.95
e) CFAT (d+b)	37.2	35.64	36.93	33.39	32.60

④ Calculation of NPV :-

Years	Net Cash Flow	Df @ 13%	Present Value
0	(130)	1	(130)
1	37.20	0.885	32.92
2	35.64	0.783	27.91
3	36.93	0.693	25.59
4	33.39	0.613	20.47
5	99.88 (32.60 + 67.28)	0.543	54.23
			NPV = 31.12 lakhs