

## I Financial Management

20BCE196

Year	Project P	Project q
1	27000	8000
2	25000	17000
3	30000	24000
4	14000	33000

CCF for Project P

$$y-1 = 29,000$$

$$y-2 = -22,000$$

$$y-3 = 4,000$$

$$y-4 = 47,000$$

$$\text{PBP for Project P} = 2 + \frac{22k}{25k} = 2.84 \text{ years.}$$

CCF for Project q

$$y-1 = -27,000, \text{ PBP for project q} = 2 + \frac{7k}{33k} = 2.22 \text{ years.}$$

$$y-2 = -7000$$

$$y-3 = 26,000$$

$$y-4 = 50,000$$

Discounted Payback Period:-

PV of cash flow for Project P:

$$y-1 = -19,090.91$$

$$y-2 = 6,671.57$$

$$y-3 = 19,047.62$$

$$y-4 = 30,669.42$$

DPBP for Project P:-

$$2 + \frac{(27k - 19090.91)}{(28k)} = 2.57 \text{ years.}$$

$$(28k) + 0.10 \times 19090.91$$

2.

PV for Project Q:-

$$Y-1 = 21878.28$$

$$DPBP = \frac{21878.28}{2+0.10} - 11289.26$$

$$Y-2 = 11289.26$$

$$(33K / (2+0.10)^2) - 11289.26$$

$$Y-3 = 95239.10$$

$$= 2.32 \text{ years}$$

$$Y-4 = 27426.52$$

NPV for Project P:-

$$\begin{aligned} NPV &= PV \text{ of cash flow} - \text{initial investment} \\ &= 75419.52 - 50,000 \\ &= 25,419.52 \end{aligned}$$

NPV for Project Q:-

$$\begin{aligned} NPV &= 75762.05 - 45,000 \\ &= 30,762.05 \end{aligned}$$

PJ for Project P:-

$$\begin{aligned} PJ &= PV \text{ of cash flow / initial investment} \\ &= 75419.52 / 50,000 \\ &= 1.52 \end{aligned}$$

for Project Q:-

$$PJ = 75762.05 / 45K = 1.68$$

⇒ Project Q has higher NPV & PI which indicated better profitability.

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Year	Return on the Ele. Ltd (%)	Return on Market Portfolio (%)
1	15	12
2	-6	1
3	18	24
4	30	24
5	12	16
6	25	30
7	2	-3
8	20	24
9	18	28
10	24	22
11	8	22

Avg. return ( $R_m$ ) =  $(12+16+15)/3 = 14.33\%$   
 Deviation =  $[-2.33, 1.67, 0.67]$

Covariance ( $R_{di}, R_m$ ) =  $[(C-0.57) \times (-2.33)] +$   
 $[(C-21.57) \times 1.67] + [2.43 \times 0.67] + [14.43$   
 $\times (-2.33)] + [(-13.57) \times 1.67] + [2.43 \times 0.67]$   
 $+ [8.43 \times 0.67]$   
 $= -143.14$

Variance ( $R_m$ ) =  $[(C-2.33)^2 + 1.67^2 + 0.67^2]/3$   
 $= 3.12$

The Beta of Auto electrical limited:

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$$\text{Beta} = \text{Covariance}(R_A, R_m) / \text{Variance}(R_m)$$
$$= -143.14 / 3.11$$
$$= -46.08$$

⇒ Indicated highly negatively correlated with the market.

Q-3-(A) Selling price/unit :- Rs. 20  
Variable cost/unit :- Rs. 12  
Total fixed cost :- Rs 560 K

⇒ Break-even point :-

$$\text{Contribution margin/unit} = \text{Selling price per unit} - \text{Variable cost per unit}$$
$$= 20 - 12$$
$$= 8 \text{ Rs.}$$

$$\text{Break-even point} = \text{Fixed costs} / \text{Contri./unit.}$$
$$= 560000 / 8$$
$$= 70,000 \text{ Units.}$$

⇒ If the cost is increased Rs. 670000, then new break-even point is

$$\text{Break-even point} = 670000 / 8$$
$$= 83750 \text{ Only}$$

5.

- 3) If the selling price increased to Rs. 22 the contribution margin / unit would change.

$$\text{Contribution margin / unit} = 22 - 12 \text{ Rs} \\ = 10 \text{ Rs}$$

$$\text{Break-Even point} = \frac{56000}{10} \\ = 56000 \text{ Units}$$

B) Equity beta = 1.2, Risk premium = 7%,  
risk-free rate = 10%, debt-equity ratio = 2 : 3, Pre-tax cost of debt = 14%,  
tax-rate = 35%

$$\rightarrow \text{Cost of equity} = \text{Risk free rate} + \frac{\text{Equity Beta}}{\text{Market Risk}} * \text{Risk premium} \\ = 10\% + 1.2 * 7\% \\ = 18.4\%$$

$$\text{After-tax cost of debt} = 14\% * (1 - 35\%) \\ = 9.1\%$$

$$\text{Proportion of debt} = 2 / (2+3) = 40\%$$

$$\text{Proportion of equity} = 3 / (2+3) = 60\%$$

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$$\begin{aligned}
 \text{coAcc} &= (\text{Proportion of debt} * \text{After tax cost of debt}) \\
 &\quad + (\text{Proportion of equity} * \text{cost of equity}) \\
 &= (0.4 * 9.2) + (0.6 * 18.4\%) \\
 \text{coAcc} &= 13.6\%
 \end{aligned}$$

Q-4. Cost of capital = 20%, ratio of var. cost = 0.80. Credit period = 60 days.

$$\begin{aligned}
 \text{Incremental benefits} &= \frac{\text{Additional sales}}{\text{Bad debt + expense}} \\
 &= \frac{1.5 \text{ m}}{0.075 \text{ m.}} \\
 &= 1.425 \text{ million.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Incremental cost} &= (\text{Additional var. cost} / \\
 &\quad \text{Additional sales}) * \\
 &\quad \text{Incremental ben.} * \text{opp. cos.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Opportunity cost} &= \left( \frac{60}{365} - \frac{45}{365} \right) * 15 \text{ m.} \\
 &= 1.23 \text{ million.} * \frac{20\%}{365} \\
 &= 67.39 \text{ t.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Incremental cost} &= 1.2 \text{ million} + 67.39 \text{ t.} \\
 &= 1.27 \text{ million.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Effect on profit} &= \frac{\text{incremental benefits}}{\text{incremental costs}}
 \end{aligned}$$

7.

$$\text{Effect on Profit} = 1,425 \text{ Million} - 1,27 \text{ millions} \\ = 155000 \text{ Rs.}$$

The profit could be increased by  
Rs. 155,000.

2) Particulars	Beginning of 2010 (RS)	End of 2010 (RS)
Inventory	60	64
Accounts receivables	80	88
Accounts payables	40	46

$$\text{cost of goods sold} = \text{Rs. } \frac{360}{500}$$

$$\text{amount of Sales} = \text{Rs. } 500$$

$$\text{Days Inventory held} = \frac{\text{Avg. Inventory}}{\text{cost of goods sold}} \times 365 \\ = \frac{(112 \times 365)}{360} \\ = 133.33 \text{ days.}$$

$$\text{Days Sales Outstanding} = \frac{\text{Accounts Receivables}}{\text{Sales}} \times 365 \\ = \frac{88}{500} \times 365 \\ = 64.4 \text{ days.}$$

$$\text{Days Payable Outstanding} = \frac{\text{Accounts Payables}}{\text{cost of goods sold}} \times 365$$

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$$= (46/360) \times 365 \\ = 47.22 \text{ Days.}$$

Cash Cycle = operating Cycle - DPO

$$= 177.73 - 47.22 \\ = 130.51 \text{ days.}$$

Operating Cycle = DIH + DSO

$$= 123.33 + 64.4 \\ = 177.73 \text{ days.}$$

- ⇒ Cash Cycle < operating Cycle  
which is a positive effect and shows that company is sufficiently managing cash flow.

Q-5.

- 1) The Requirement of working capital depends on various factor justify.
- It generally refers to the funds that a company needs to cover its daily operations and to ensure that it has enough cash to pay its bills and debts.
- Industry : Different industries have different working capital requirements.

→ Business Cycle :- During the growth phase, a company may require more working capital to expand its operations.

→ Seasonality :- Companies that experience seasonal variations in demand may require more working capital during peak seasons to cover the cost.

→ Growth plans :- Companies that plan to expand their operations or enter new markets may require more working capital to fund their growth.

→ These factors are essential for brands to manage their working capital effectively.

2) Various long term and short term sources are available for finance to business justify.

→ There are several options available for business to raise capital such as:

Short-term Sources:- Bank overdraft  
 Trade credit  
 Factoring  
 Commercial papers.

Long-term Sources:- Equity shares  
 preference shares  
 Debentures  
 Bonds  
 Bank loans

- short term sources are generally used to meet the immediate financial requirements of a company. On the other hand long term sources of finance are utilized for long-term investments.
- businesses have the flexibility to choose from a range of sources of finance based on their requirements and financial goals.

Q-6. Cash budget for the upcoming quarter January to March

January :-

Receipts :- Sales of Rs. 50,000

Payments :- Purchase  $\rightarrow$  20,000 Rs., Rent  $\rightarrow$  5000 Rs.  
Salaries & other  $\rightarrow$  15,000 Rs.

Net Cash Flow :- Rs. 1000.

February :-

Receipts :- sales  $\rightarrow$  55000 Rs.

Payments :- Purchases  $\rightarrow$  22,000 Rs., Rent  $\rightarrow$  5000 Rs.  
Salaries & other  $\rightarrow$  18,000 Rs.  
Furniture  $\rightarrow$  25,000 Rs.

Net Cash Flow :- 15,000 Rs.

March :-

Receipts :- Sales  $\rightarrow$  60,000 Rs.

Payments :- purchases  $\rightarrow$  25,000 Rs., Rent  $\rightarrow$  5000 Rs.  
Salaries & other  $\rightarrow$  20,000 Rs.

Net Cash Flow :- 10,000 Rs.

Surplus / deficit in relation to the  
target cash balance Rs. 8,000

January :- Cash balance

5000 + 10,000 Rs

= 15,000 Rs (Surplus)

February = Cash balance  
= 15,000 - 15,000 Rs.  
= 0 Rs (Deficit)

March = Cash balance.  
= 0 + 10,000 Rs  
= 10,000 rs. (Surplus).

2) The total surplus/deficit in relation to the target Cash balance for the quarter is a deficit of Rs. 6000.