CMR

17MBA22

II - IAT, Financial Management Solutions

Date of IAT: 26/4/18. [2017 - 2019] batch.

Part A

1a) Define cost of capital.

It is the minimum rate of return that a firm has to earn inorder to maintain the market value of firm.

Other name: required rate of return
Implicit cost of capital

1b. Capital Budgeting:

Capital budgeting is the procen of making investmen decisions in capital expenditure. It is an expenditure the benefits of which are expected to be received over a period time exceeding one year.

It is the procen of identifying, analyzing and selecting investment project whose returns (cash flows) are expecte to extend beyond one year.

1c). P: ₹ 600,000/- Tax rate 30%. I: 12% on debentu

i) Debenture issued at par

$K_d = \frac{I}{np}$,

$= \frac{72000}{600,000} \times 100 = 12\%$

K_d = 12% (Beyor Tax)

$I = \frac{12}{100} \times 600,000$

I = ₹ 72000/

np = par value - Dis co

np 600,000 - 0

np: 600,000

Kd at por After Tax

$K_d (1 - T)$

$12\% (1 - 0.30)$

$12\% (0.70) = 8.4\%$

A firm has to earn a minimum of 8.4% inorder to maintain the market value of shares.

2a) **Profitability Index :**

It is Otherwise called as Profit investment ratio and value investment ratio (VIR).

It is a tool for ranking project because it allows to quantify the amount of value created per unit of investment.

b) CMP : ₹ 350.75/-

D : ₹ 5.25/ share.

Growth rate 15%.

Income Tax : 40%

Brokerage : 2%

$K_e = K_e \left[\frac{1 - T_i}{1 - T_b} \right]$

$K_e = \frac{D}{cmp} + G$

$= \left[\frac{5.25}{350.75} + 0.15 \right] = \left[0.015 + 0.15 \right] \times 100$

0.165×100

$\therefore K_e = 16.5\%$

$K_e = 16.5\%$

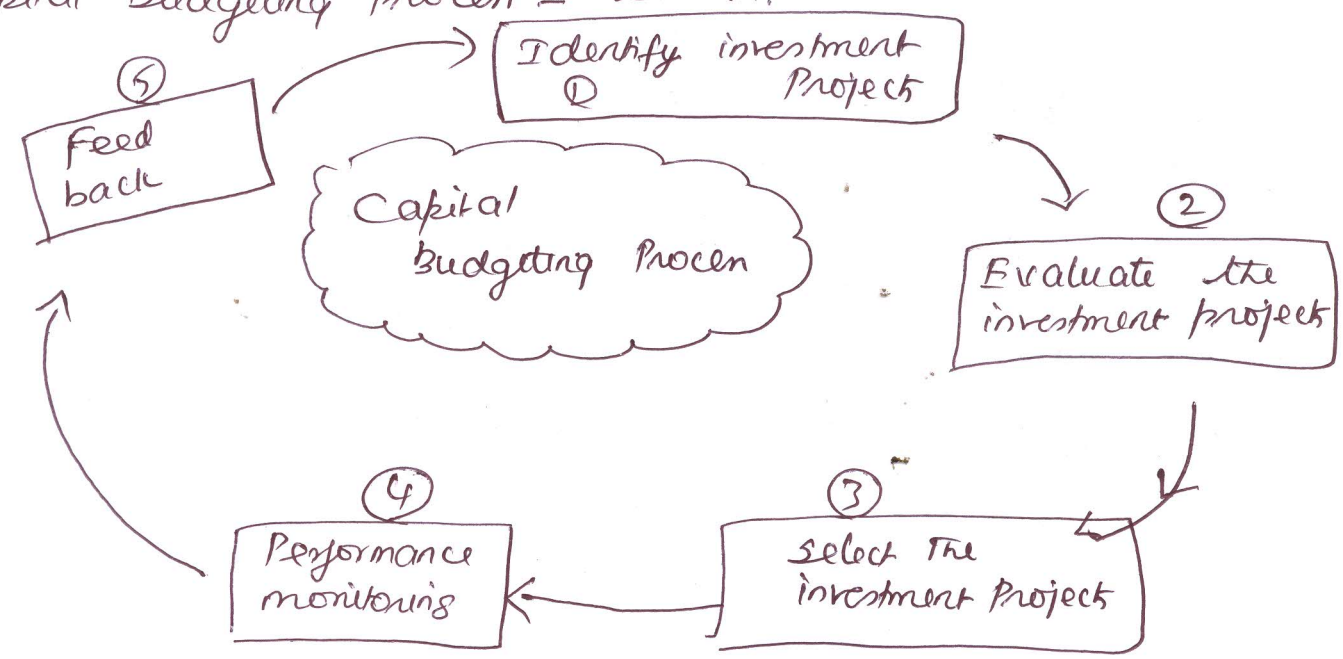
$$K_d = K_e \left[\frac{1 - T_i}{1 - T_b} \right]$$

$$16.5\% \left[\frac{1 - 0.40}{1 - 0.02} \right]$$

$$16.5\% \left[\frac{0.60}{0.98} \right] = 16.5\% \left[0.612 \right] = \underline{10.09\%}$$

$K_d = 10.09\%$ Ans

3C. Capital Budgeting Procen – Discuss.



3 a) Marginal cost of capital

Marginal cost of capital means, cost involved for additional source of finance.

It is the cost of raising one more unit of capital.

If the company raise more capital, the cost of capital will also raise.

b) calculation of WACC. book value weight and Market value weight

Book value calculation for WACC

Sources of finance	Amount (Rs)	weight	Specific cost	weighted cost
Debt capital*	400,000*	0.308*	x 0.05 =	0.015
Pref. capital	100,000	0.07	x 0.08 =	0.006
Eq. capital	600,000	0.46	x 0.15 =	0.069
Retained earnings	200,000	0.15	x 0.13 =	0.019
	13,00,000			0.109

calculation of weights

Debt capital: $\frac{400,000}{13,00,000} = 0.308$

WACC for book value: 0.109 x 100

= 10.9 %

WACC for market value

Source of finance	Amount (Rs)	weight	Specific cost	weighted cost
Debt capital	380,000*	0.22*	0.05	0.011
Pref. capital	110,000	0.065	0.08	0.005
Eq. capital	900,000	0.532	0.15	0.079
Retained Earnings	300,000	0.177	0.13	0.023
	16,90,000			0.118

Weight for debt capital: $\frac{380,000}{16,90,000} = 0.22$*

WACC = $0.118 \times 100 = 11.8\%$

Inference: WACC for market value is always greater than book value as it reflects the market price.

3. c) Calculation of individual specific costs.

CMP: Rs 102.
D: Rs 10/share.
Growth rate 10%
Tax rate 50%.

$K_e = \left(\frac{D}{CMP} + g\right) \times 100$

$= \left(\frac{10}{102} + 0.10\right) \times 100 = 19.80\%$

b). Debenture raised for ₹ 300,000

I, 12 %.

$K_d = \frac{I}{RP} \times 100$

$I = \frac{12}{100} \times 300,000 = 360,000/-$

$\frac{360,000}{300,000} \times 100 = 12\%$

Kd before Tax. 12 %

Kd after Tax. Kd (1 − T)

12 % (1 − 0.50)

Kd after Tax: 6 %.

WACC

Sources of finance	Amount	Specific cost	weight	Weighted cost
Eq share	400,000	0.400	0.30	0.1200
10 % Pref shares	100,000	0.10	0.076	0.007
11 % debentures	500,000	0.50	0.384	0.192
~~2 % debentures~~	~~300,000~~	~~0.06~~	~~0.230~~	0.3196
	1000,000			

WACC: 0.3196 × 100 = 31.96 %.

WACC for additional information:

$$Ke = \left(\frac{D}{mp} + g\right) \times 100$$

$$= \left[\frac{12}{98} + 0.08\right] \times 100 = 0.2024 \times 100 = 20.24\%$$

WACC

Source of finance	Amount	weight	specific cost	weighted cost
Equity share	400,000	0.308	0.2024	0.0623
10% Preshare	100,000	0.077	0.10	0.0077
11% debenture	500,000	0.385	0.11	0.0423
12% debenture	300,000	0.231	0.06	0.0139
	13,00,000			0.1262

WACC: $0.1262 \times 100 = 12.62\%$

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Part B

4 a).

NPV

Co: −20,000

Project A

Yr.	cash flow	10% Discount factor	P.V
1	0	0.909	0
2	5000	0.826	4130
3	20,000	0.751	15020
4	14000	0.683	9562
5	14,000	0.621	8694
		Total. P.CF	37406
		← Co	20,000
		NPV	17406

Co: −40,000

Project B

Yr	cash flow	10% discount factor	P.V
1	10,000 ×	0.909 =	9090
2	14000 ×	0.826 =	11564
3	16000 ×	0.751 =	12016
4	17000 ×	0.683 =	11611
5	15000 ×	0.621 =	9315
			53596
		Total PCF	40,000
		← Co	
		NPV	13596

Inference

According to Npv method Project A can be accepted since its Npv is higher than Project B.

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P.I : $\frac{\text{INPV}}{\text{Co}}$

Project A : $\frac{37406}{20,000} = 1.87$

Project B : $\frac{53596}{40,000} = 1.33$

Inference: According to P.I method, Project A is more preferable as its P.I is high.

Pay Back period — Co : 20,000

Project A

Yr	CF	Cummulative CF
0	0	0
1	~~5000~~	
2	5000	5000
3	20,000	25000
4	14000	39000
5	14000	53000

$$PBP = \text{Year before full recovery} + \left[\frac{\text{Unrecovered amount of investment}}{\text{cash flows of the year}} \times 12\text{m}\right]$$

$$2\text{yr} + \left[\frac{20,000 - 5000}{25000 - 5000} \times 12\text{m}\right]$$

PBP = 2yr + 9months for Project A

C_0 : − 40,000

Project B

Yr	CF	CCF
1	10,000	10,000
2	14000	24000
3	16000	40,000
4	17000	57000
5	15000	72000.

PBP : 3rd year

Inference : Accept Project A, since its Pay back period is short and faster.