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Internal Assesment Test - II

Sub:	Financial Management			Code:	18MBA22
Date	06/04/19	Duration: 90 mins	Max Marks: 50	Sem: II Branch:	MBA

		Marks	OBE	
			CO	RBT
1 (a)	Define Cost of capital	[02]	CO3	L1
(b)	Compute MIRR for the following projects:	[05]	CO3	L3

Year	0	1	2	3	4	5	6
Cash flow	485,000	85,400	96,500	132,600	216,000	124,000	98,500

Cost of capital is 12%

(c)	ABC LTd issues 12% debentures of Rs 600,000. The tax rate applicable is 30%. Compute the cost of debt capital i) at par ii) at 10% premium iii) at 10% discount.	[08]	CO3	L3
2a)	What is capital rationing	[02]	CO3	L1
(b)	Explain the various sources of financing.	[05]	CO3	L4
c)	A Company's after tax , cost of capital of the specific sources is as follows	[08]	CO3	L3

Sources of finance	Book Value(Rs)	Market Value(Rs)	Specific Cost(%
Debt Capital	400,000	380,000	5
Preference Capital	100,000	110,000	8
Equity capital	600,000	900,000	15
Retained Earnings	200,000	300,000	13

Compute WACC based on a) book Value weight   b) Market value Weights

3 (a)	What do you mean by profitability index?	[02]	CO3	L1
(b)	Explain CAPM and its assumptions	[05]	CO3	L4
c)	A Company plans to undertake a project for placing new product line in the market. The company's cut off rate is 12%. It was estimated that the project would cost Rs 40,00,000 in plant and machinery in addition to working capital of Rs 10,00,000 at the end of the life of the project , Scrap value 10% . After tax is estimated as follows	[08]	CO3	L3

Year	1	2	3	4	5
PAT (Rs)	300,000	800,000	13,00,000	500,000	400,000
DF @ 12%	0.893	0.797	0.712	0.636	0.567

Evaluate the Project under: a) NPV, b) PI

Part B (Answer all the questions, each question carries 20 marks)

4

a. ABC has the following book value capital structure (Rs in crores)   (10)   CO3 L 3

Equity capital (in shares of Rs 10 each)	Rs 15
12% preferential capital(in shares of Rs 100 each	Rs 1
Retained earnings	Rs 20
11.5% debentures (of Rs 100 each)	Rs 10
11% Term loans	Rs 12.5

The next expected dividend on equity shares per share is Rs 3.60, the dividend per share is expected to grow at the rate of 7%. The market price per share is Rs 40. Preference share, redeemable after 10 years is currently selling at Rs 75 per share. Debentures, redeemable after six years are selling at Rs 80 per debenture. The income tax rate for the company is 40%. You are required to calculate WACC at Book value and market value weights.

b. A company has to select one of the two alternative projects where particulars given below   (10)   CO3

L3

Year	0	1	2	3	4
Project A	128,720	100,000	20,000	10,000	10,000
Project B	105,000	10,000	10,000	20,000	100,000

The company can arrange necessary funds @ 8%. Compute NPV and IRR for each project and comment on the results.

1a. Cost of Capital (2)

Cost of capital is the required return necessary to make a capital budgeting project, such as building a new factory, worthwhile. When analysts and investors discuss the cost of capital, they typically mean the weighted average of a firm's cost of debt and cost of equity blended together.

The cost of capital metric is used by companies internally to judge whether a capital project is worth the expenditure of resources, and by investors who use it to determine whether an investment is worth the risk compared to the return. The cost of capital depends on the mode of financing used. It refers to the cost of equity if the business is financed solely through equity, or to the cost of debt if it is financed solely through debt.

Many companies use a combination of debt and equity to finance their businesses and, for such companies, the overall cost of capital is derived from the weighted average cost of all capital sources, widely known as the weighted average cost of capital (WACC).

2a. Capital rationing

Capital rationing is the act of placing restrictions on the amount of new investments or projects undertaken by a company. This is accomplished by imposing a higher cost of capital for investment consideration or by setting a ceiling on specific portions of a budget. Companies may want to implement capital rationing in situations where past returns of an investment were lower than expected.

2.b Various Sources of Financing

According to Time Period

Sources of financing a business are classified based on the time period for which the money is required. The time period is commonly classified into following three:

LONG TERM SOURCES OF FINANCE / FUNDS	MEDIUM TERM SOURCES OF FINANCE / FUNDS	SHORT TERM SOURCES OF FINANCE / FUNDS
Share Capital or Equity Shares	Preference Capital or Preference Shares	Trade Credit
Preference Capital or Preference Shares	Debenture / Bonds	Factoring Services
Retained Earnings or Internal Accruals	Lease Finance	Bill Discounting etc.
Debenture / Bonds	Hire Purchase Finance	Advances received from customers
Term Loans from Financial Institutes, Government, and Commercial Banks	Medium Term Loans from Financial Institutes, Government, and Commercial Banks	Short Term Loans like Working Capital Loans from Commercial Banks
Venture Funding		Fixed Deposits (<1 Year)
Asset Securitization		Receivables and Payables

International Financing by way
of Euro Issue, Foreign Currency
Loans, ADR, GDR etc.

Long-Term Sources of Finance

Long-term financing means capital requirements for a period of more than 5 years to 10, 15, 20 years or maybe more depending on other factors. Capital expenditures in fixed assets like plant and machinery, land and building etc of a business are funded using long-term sources of finance. Part of working capital which permanently stays with the business is also financed with long-term sources of funds. Long-term financing sources can be in form of any of them:

- ➢ Share Capital or Equity Shares

- ➢ Preference Capital or Preference Shares

- ➢ Retained Earnings or Internal Accruals

- ➢ Debenture / Bonds

- ➢ Term Loans from Financial Institutes, Government, and Commercial Banks

- ➢ Venture Funding

3a. what do you mean by Profitability Index.

Profitability index (PI), also known as profit investment ratio (PIR) and value investment ratio (VIR), is the ratio of payoff to investment of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment.

3.b Explain CAPM and its assumptions

CAPM

The Capital Asset Pricing Model (CAPM) describes the relationship between systematic risk and expected return for assets, particularly stocks. CAPM is widely used throughout finance for pricing risky securities and generating expected returns for assets given the risk of those assets and cost of capital.

Assumptions

(1) Investors are expected to make decisions based solely on risk-return assessments (expected returns and standard deviation measures).

(2) The purchase and sale transactions can be undertaken in infinitely divisible units.

(3) Investors can sell short any number of shares without limit.

(4) There is perfect competition and no single investor can influence prices, with no transactions costs, involved.

(5) Personal income taxation is assumed to be zero.

(6) Investors can borrow/lend, the desired amount at riskless rate

1.C. Debenture = $\dfrac{\text{Interest}}{\text{Amt of Capital}} \times 100$

(i) at par

$= \dfrac{72000}{6,00,000} \times 100 = @ \ 12\%$

after tax.

$= 0.12(1 - 0.30)$

$= 0.084$

$= 8.4\%$

(ii) at premium 10%

$= \dfrac{72000}{6,60,000} \times 100 = 10.9\%$

after tax

$= 0.109 (1 - 0.30)$

$= 7.63\%$

(iii) at Discount

$= \dfrac{72000}{540000} \times 100$

$= 13.3\%$

after tax.

$= 0.13 (1 - 0.30)$

$= 9.3\%$

26. Compute MIRR: n = 6 years   Cost of Capital = 12%

$$MIRR = \sqrt[n]{\dfrac{\text{Terminal Value of Cash inflow}}{\text{Present Value of Cash outflow}}} - 1$$

Step 1: Calculating the terminal Value of Cash inflow.

Year	Cashflow	Duration	Rate	working	Terminal Value
1	85,400	5	12%	$85,400 \times 1.12^5$	1,50,504
2	96,500	4	12%	$96,500 \times 1.12^4$	1,51,845
3	1,32,600	3	12%	$1,32,600 \times 1.12^3$	1,86,293
4	2,16,000	2	12%	$2,16,000 \times 1.12^2$	2,61,360
5	1,24,000	1	12%	$1,24,000 \times 1.12$	1,38,880
6	98,500	0	12%	1.00	98,500
					9,87,382

Step 2: Calculating the present Value of Cash outflow.

$$4,85,000 \times 1.00 = 4,85,000$$

$$MIRR = \sqrt[6]{\dfrac{9,87,382}{4,85,000}} - 1$$

$$= 1.126 - 1 = .126 = 12.6\%$$

2.C. WACC.

Book Value.

Sources of finance	Amt	weight	Specific Cost	WA.
Debt	4,00,000	0.3077	0.05	0.0154
P.S	1,00,000	0.0769	0.08	0.0061
Equity	6,00,000	0.4615	0.15	0.06923
Retained	2,00,000	0.1538	0.13	0.0200
	13,00,000			0.1107

WACC = 11.07%

Market Value.

Sources of finance	Amt	weight	Specific Cost	WA.
Debt	3,80,000	0.2249	0.05	0.0112
P.S	1,11,000	0.0657	0.08	0.0053
Equity	9,00,000	0.5325	0.15	0.0799
Retained Earnings.	3,00,000	0.1775	0.13	0.0231
	16,90,000			0.1195

WACC 11.95%

2C. : Cut off Rate : 12%

Initial Investment : 40,00,000/-

Scrap value @ the end = 10% of 40,00,000

=) 4,00,000/-

NPV: Present value of Cash inflow - present value of Cash outflow.

Year	Cash inflow	D.F @ 12%	PV cashflow
1	3,00,000	0.893	2,67,900
2	8,00,000	0.797	6,37,600
3	13,00,000	0.712	9,25,600
4	5,00,000	0.636	3,18,000
5	4,00,000	0.567	2,26,800
Scrap. 5th	4,00,000	0.567	2,26,800
			26,02,700
			- 40,00,000
		NAV =	- 13,97,300

Profitability Index:

= $\dfrac{\text{Total Net present value of Cash inflow}}{\text{initial investment}}$ = $\dfrac{26,02,700}{40,00,000}$

= 0.6506.

As per NAV and PI the project has to be rejected.

4.a. WACC:

$$ke = \left(\frac{Div}{N_p} + g\right) \times 100$$

$$= \left(\frac{3.60}{40} + 0.07\right) \times 100 \qquad , \quad 16\%.$$

$$k_p = \frac{D + \frac{1}{n}[p-np]}{\frac{p+np}{2}} \times 100 \quad \Rightarrow \quad \frac{12 + \frac{1}{10}(100-75)}{\frac{175}{2}} = 16.57\%.$$

$$kd = \frac{I + \frac{1}{n}(p-np)}{\frac{p+np}{2}} \times 100 \quad \Rightarrow \quad \frac{11.5 + \frac{1}{6}(100-80)}{\frac{180}{2}} \Rightarrow \frac{16.49}{16.97}.$$

$$\Rightarrow 16.47(1-T) = .1647(0.60)$$

$$\Rightarrow \cancel{9.235\%} \quad \cancel{7.6} \; 9.89\%.$$

$$kr = ke = 16\%.$$

$$kt = 0.11 \times (1-t)$$

$$= 0.11 \times (0.60) = 6.6\%.$$

$$\therefore \; ke = 16\%.$$
$$kp = 16.57\%.$$
$$kd = 9.89\%.$$
$$kr = 16\%.$$
$$kt =$$

WACC Book Value.

Source of capital	Amt in Cr.	weight	Specific Cost	WACC
equity	15	0.256	0.16	0.04096
pref. share cap	1	0.017	0.165	0.0029
Retained earnings	20	0.341	0.16	0.0546
debenture	10	0.170	0.0988	0.0168
Term loan	12.5	0.213	0.066	0.0140
	58.5			0.12919

WACC = 12.92%.

Computation of Market Value:

1. equity Capital:

1 share price	Book Value.
10 Rs :	15 cr
40 :	? (x)

10x = 40×15 =) 60 cr

2. preference share Capital.

1 share price.	Book Value
100 R. :	1 cr
75 R. :	x. (?)

= 75 lakh.

3. Debenture:

1 debenture	Book Value.
100 R. :	10 cr
80 R. :	x. (?)

=) 8 cr

WACC at Market Value:

Source of Capital	Amt (cr).	weights	Specific Cost	WACC
Equity	60	0.7384	0.16	0.1181
P.S	0.75	0.0092	0.1657	0.0015
Debenture	8	0.0984	0.0988	0.0097
Termloon	12.5	0.1538	0.066	0.01015
	81.25			0.13953

WACC : Book Value : 12.92 %

Market Value : 13.953 %

4.b. Computation of IRR and NPV @ 10%.

Project A

IRR: For IRR = $\dfrac{Inv}{Avg\ Earning}$ = $\dfrac{1,28,720}{35,000}$ = 3.677 = 14%

Project - B.

$\dfrac{105000}{35000}$ = 3 = 12%

IRR Calculation:

Year	C.F Project A	D.f@4%	DR@14%	GNPV	TNPV	C.F	DR@12%	D.R@8%	PVF	PVTF
1	1,00,000	0.9615	0.8772	96150	87720	10,000	0.8929	0.9259	8929	9259
2	20,000	0.9246	0.7695	18492	15390	10,000	0.7972	0.8573	7972	8573
3	10,000	0.8890	0.6750	8890	6750	20,000	0.7118	0.7938	14236	15876
4	10,000	0.8548	0.5921	8548	5921	1,00,000	0.6355	0.7350	63550	73500
				132080	115781				94687	107208
				-128720	-128720				-105000	-105000
				3360	-12939				-10313	2208

Project A = $4 + \dfrac{132080 - 128720}{132080 - 115781} \times 10$

= 6.06%

Project B = $8 + \dfrac{107208 - 105000}{107208 - 94687} \times 4$

= 8.705%

Npv

Years	Cashflow	Discounted Rate 8%	A PV	B Cashflow	B PV
1	1,00,000	0.9259	92,590	10,000	9,259
2	20,000	0.8573	17,146	10,000	8,573
3	10,000	0.7938	7,938	20,000	15,876
4	10,000	0.7350	7,350	1,00,000	73,500
			1,25,024		1,07,208

Npv project A = -1,28,720 + 1,25,024 = -3696

Npv project B = 1,07,208 - 105000 = 2208.

project B has to be selected because the Npv of project B is higher than that of project A.