Problem 1

Determine the cost of capital in the following cases:

(a) X Ltd issues 14 percent debentures of face value INR 100 each and realizes INR 90 per debenture The debentures are redeemable after 10 years at a premium of 10 per cent

(b) Y Ltd issues 12 per cent preference shares of face value INR 100 each and realizes INR 92 per share. The shares are repayable after 10 years at par.

Note: Both the companies are paying income tax at 50 per cent

Problem 2

A company raised preference share capital of INR 1,00,000 by the issue of 12 per cent, preference share of INR 100 each. Find out the cost of preference share capital when it is issued at (a) 12 per cent premium and (b) 12 per cent discount.

Problem 3

A company has 10 per cent redeemable preference shares, which are redeemable at the end of 12th year from the date of issue. The underwriting expenses are expected to be 3 per cent. Find out the effective cost of preference share capital.

Problem 4

Share capital of a firm is 1,00,000 equity shares of INR 100 each. Its current earnings are INR 10,00,000 p.a. The company wants to raise additional funds of INR 25,00,000 by issuing new shares. The floatation cost is expected to be 10 per cent of face value. Determine the cost of equity.

Problem 5

A company is considering raising of funds above 1NR 10 million by one of the following two possible alternatives:

1. 16 percent institutional loan
2. 14 per cent non-convertible debentures

Cost of issuing debentures at a discount of 2.5 per cent is INR 1,00,000. Assume a tax rate of 50 per cent. What alternative should the firm adopt?

Problem 6

The current market price of the shares, of a company is INR 30 per share. The company pays dividend of INR 5 every year. The profits of the company are expected to grow at the rate of 12 per cent p.a. and the company maintains 100 per cent payout ratio Determine the cost of equity for the company. What should be the current, price of the share if the growth rate of the company is (a) 8 per cent, (b) 10 per cent and (c) 14 percent?

Problem 7

Table shows the capital structure of X Ltd. Determine the WACC of the firm based on the book value weights.

Capital structure of X Ltd

Source of finance	Amount (INR)	Cost
Preference shares	2,00,000	12%
Equity share capital	3,00,000	15%
Retained earnings	1,50,000	15%
Debentures	3,50,000	10%

Problem 8

The balance sheet of XYZ Ltd reveals the information shown in Table.

Source of funds	Amount (in INR million)
Equity capital	400
12% debentures	600
16% term loans	1,000
Total	**2,000**

Calculate:

(a) The WACC of the company. The company as a rule pays constant dividend at the rate of 20 per cent p.a.

(b) What difference will it make if the current price of the INR 100 face value share is INR 150?

(c) The effect of tax on the cost of capital under both the conditions (tax rate is 50 per cent).

Problem 9

The following information is available from the balance sheet of Nehar Cosmetics Ltd.

The available data

Source of fund	Amount in INR
Equity share capital 25,000 at INJR1 0	2,50,000
Reserve and surplus	1,50,000
9% debentures	1,00,000

Tax rate for the company is 50 per cent. The equity dividend is 12 per cent; calculate WACC from the data in Table.

Also, Table below shows the firm's capital structure.

Capital structure of the firm

Capital structure	Amount INR	Proportion
Equity	2,50,000	50%
Reserve and surplus	1,50,000	30%
Net worth	**4,00,000**	**80%**
9% debentures	1,00,000	20%
Total	**5,00,000**	**100%**

Problem 11

Dhanvantri Ltd has the following capital structure (Table 10.21):

Dhanvantri Ltd.'s capital structure

Source of fund	Amount
Equity capital 5,000 shares at INR 100	5,00,000
9% preference shares	1,50,000
12% debentures	3,50 000

The equity share of the company has a current market price of INR 105 and the company declared a dividend of INR 9 per share for the next year. The dividend growth rate is 5 percent. Tax rate is 50 per cent; the company can also raise additional loan at 10 per cent for INR 5,00,000 to finance its expansion. Calculate WACC

Problem 12

Consider the following capital structure (Table 10.24):

The capital structure

Source of fund	Amount in INR
Equity capital 4,00,000 shares at INR 10	40,00,000
8% preference shares	20,00,000
10% debentures	40,00,000
Total	1,00,00,000

Market price of equity is INR 20 and dividend to be paid by the company is INR 5 per share. Which is expected to grow at 8 per cent rate p.a.? The tax rate is 50 per cent Determine:

1. WACC.
2. New WACC if the company raises additional funds of INR 20,00,000 in the form of debt by issuing 12 per cent debentures. Then, it is expected that dividend will increase to INR 6 but the price of shares will reduce to INR 18 per share.

Problem 13

The capital structure of Company XYZ is 12 per cent debentures, 9 per cent preference shares and equity shares of INR 100 each in the ratio of 3 : 2 : 5. The company is thinking to add additional funds by raising term loan at 14 percent interest rate from financial institutions. The new ratio of above sources of funds will go down by 1/10, 1/15 and 1/16 respectively. What will be the impact on WACC of the firm if the tax rate is 50 per cent and the expected dividend of INR 9 is given at the end of the year and growth rate g is5 per cent?

Problem 14

The following information is available from the balance sheet of a company (Table 10.29):

Table 10.29 The given data

Source of fund	Amount
Equity shares 20,000 at INR 10	2,00,000
Reserves and surplus	1,30,000
8% debentures	1,70,000

The tax rate is 50 per cent while current equity dividend is 12 per cent. Calculate WACC.

Problem 15

The Sunpharma Company is expected to grow at 9 per cent p.a. Its market price per share is INR 40. The company pays a dividend of INR 3.60 per share. What is the cost of equity?

Problem 16

Ltd has a beta of 2.5. It has zero debt in its capital structure. If the expected market rate of return is 12 per cent and risk-free rate is 6 per cent, what is the cost of equity? Should the company accept a project that earns a rate of return of 14 per cent and has a beta of 0.7?

Problem 17

Y Ltd wants to raise funds by selling long-term bonds with a 9 per cent coupon. The company expects to sell the bonds at a price that will give a YTM of 10 per cent If tax rate is 50 per cent, calculate the after-tax cost of debt of the company.

Problem 19,

Mehar Ltd earns INR 5 per share Year-end dividend is INR 2 per share Market price per share is INR 50 and the expected growth rate is 8 per cent. The stock is saleable at INR 45. Calculate the cost of retained earnings for the company.

PRACTICE PROBLEMS

Problem 1.

Determine the cost of capital in the following cases:

(a) A company issues 16 per cent debentures of face value. INR 100 each and realizes INR 80 per debenture. The debentures are redeemable after 12 years at a premium of 10 per cent.

(b) A company issues 18 per cent preference shares of face value INR 100 each and realizes INR 72 per share. The shares are repayable after 10 years at par.

Note: Both the companies are paying income tax at 35 per cent.

Problem 2.

A company raises preference share capital of INR 20,00,000 by the issue of 14 per cent, preference share of INR 200 each Find out the cost of preference share capital when it is issued at (a) 18 per cent premium and (b) 20 percent discount.

Problem 3.

A company into mining and exploration has 15 per cent redeemable preference shares, which are redeemable at the end of 18^{th} year from the date of issuance. The underwriting expenses are expected to be 25per cent. Find out the effective cost of preference share capital

Problem 4.

A company into retailing has share capital to the tune of 15,00,000 equity shares of INR 100 each. Its current earnings are INR 25,00,000 p.a. The company wants to raise additional funds of INR 15,00,000 by issuing new shares. The floatation cost is expected to be 4.5 per cent of face value. Determine the cost of equity.

Problem 5.

A company has two alternatives for raising funds of around INR 280 million. Cost of issuing debentures at a discount of 1.5 .per cent is INR 18,00,000. Assume a tax rate of 35 per cent. What alternative should the firm adopt?

(a) 19 per cent institutional loan

(b) 20per cent non-convertible debentures.

Problem 6.

A company's shares are actively traded in the market. The current market price of the shares of a company is INR 1,050 per share. The company pays dividend of 1NR 30 every year. The profits of the company, are expected to grow at the rate of 6 per cent p.a. and the company maintains 100 per cent payout ratio. Determine the cost of equity for the company. What should be the current price of the share if the growth rate of the company is (a) 8 per cent, (b) 12 per cent and (c) 3 per cent?

Problem 7.

Given in the table is the capital structure of a company that is into equipment manufacturing. Determine the WACC of the firm based on the book value weights.

Source of finance	Amount (INR)	Cost (%)
Preference shares	7,00,000	9
Equity share capital	9,00,000	18
Retained earnings	10,50,000	17
Debentures	8,50,000	15

Problem 8.

The balance sheet of a diversified conglomerate giant reveals the information shown in the given table

The given information

Source of funds	Amount (in INR million)
Equity capital	800
18% debentures	1,200
21% term loans	1,400

Determine:

(a) The WACC of the company (given the dividend payout is INR 20/share)

(b) What difference will it make if the current price of the INR 100 face value share is INR 250

(c) The effect of tax on the cost of capital under both the conditions (tax rate is 35 per cent).

Problem 9.

The financial information available fora company on a spree for mergers in overseas market is provided in the given table.

The available data

Source of fund	Amount in INR
Equity share capital 1,80,000 at INR 10	18,00,000
Reserve and surplus	9,50,000
12% debentures	9,00,000

The tax rate for the company is 35 per cent. The equity dividend is 9 per cent. Calculate the WACC from the given information.