Faculty of Management Studies

University of Delhi

Financial Management

Paper Code 6204 MBAFT

Time Allowed: 3 Hours **Max. Marks: 50**

Instructions: In all attempt 5 questions. Question no 1 is compulsory. Attempt any 4 questions from the remaining.

1. Wisconsin Products Company manufactures several different products. One of the firm's principal products sells for $20 per unit. The sales manager of Wisconsin Products has stated repeatedly that he could sell more units of this product if they were available. In an attempt to substantiate his claim the sales manager conducted a market research study last year at a cost of $44,000 to determine potential demand for this product. The study indicated that Wisconsin Products could sell 18,000 units of this product annually for the next 5 years.

The equipment currently in use has the capacity to produce 11,000 units annually. The variable production costs are $9 per unit. The equipment has a book value of $60,000 and a remaining useful life of 5 years. The salvage value of the equipment is negligible now and will be zero in 5 years.

A maximum of 20,000 units could be produced annually on new machinery. The new equipment costs $300,000and has an estimated useful life of 5 years, with no salvage value at the end of 5 years. Wisconsin Products' production manager has estimated that the new equipment, if purchased, would provide increased production efficiencies that would reduce the variable production costs to $7 per unit.

Wisconsin Products Company uses straight-line depreciation on all its equipment for tax purposes. The firm is subject to a 40 percent tax rate, and its after-tax cost of capital is 15percent.

The sales manager felt so strongly about the need for additional capacity that he attempted to prepare an economic justification for the equipment although this was not one of his responsibilities. His analysis, presented below and on the next page, disappointed him because it did not justify acquisition of the equipment.

He computed the required investment as follows:

Purchase price of new equipment	$300,000
Disposal of existing equipment	
Loss on disposal	$60,000
Less tax benefit (40%)	24,000

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	36,000	
Cost of market research study	44.000	
Total investment	$380,000	
He computed the annual returns as follows:		
Contribution margin from product		
Using the new equipment [18,000 X ($20 -$7)]		$234,000
Using the existing equipment [11,000 x ($20 -$9)]		121,000
Increase in contribution margin		$1 13,000
Less depreciation		60,000
Increase in before-tax income		$53,000
Income tax (40%)		2 1,200
Increase in income		$ 31,800
Less 15% cost of capital on the additional investment required		
(0.15 X $380,000)		57,000
Net annual return on proposed investment in new equipment		$ (25,200)

The controller of Wisconsin Products Company plans to prepare a discounted cash flow analysis for this investment proposal. The controller has asked you to prepare corrected calculations of

(a) the required investment in the new equipment and

(b) the recurring annual cash flows. Explain why your corrected calculations differ from the original analysis prepared by the sales manager.

(c) Calculate the net present value of the proposed investment in the new equipment. 10

2. Asian Paper Company is considering a new linerboard machine costing Rs 2 million. It is expected to produce after-tax savings of Rs 400,000 per year for eight years. The required rate of return on unlevered equity is 13 percent. To an all-equity-financed firm it is the policy of the company to finance capital investment projects with 50 percent debt, because that is the target debt to total capitalization of the company. Asian Paper Company is able to borrow Rs 1 million at 10 percent interest to finance part of the new machine. (The balance will come from equity funds.) The principal amount of the loan will be repaid in equal year-end instalments of Rs 125,000 through

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the end of the eighth year. (In this way the amount borrowed declines over time along with, we would assume, the value of the depreciating asset.) If the company's tax rate equals 40 percent.

Calculate the NPV and adjusted net present value. After assuming that floatation cost is Rs 12,000. Also prepare the debt repayments schedule. 10

Or

Keerthinath Corporation presently has two million outstanding equity shares (Rs.10 par) selling at Rs.11 per share and no outstanding debt . It needs Rs.8 million of additional funds which can be raised in two ways:
(a) issue of 0.8 million equity shares at Rs.10 per share, (b) issue of debt capital carrying 14 percent interest.
The expected earnings before interest and taxes after the new funds are raised will be Rs.6 million per year with a standard deviation of Rs.2 million. Keerthinath Corporation's tax rate is 35 percent. What is the probability that the debt alternative is better than the equity alternative with respect to earnings per share. 10

3. From the following data on capital projects being evaluated by the management of X limited

	Project M
Annual cost saving	40,000
Useful life	4 years
I.R.R.	15%
Profitability index	1.064
NPV	?
Cost of capital	?
Cost of project	?
Payback period	?
Salvage value	0

Find the missing values considering the following table of discount factors:

Discount factor	***12%***	***13%***	***14%***	***15%***
Year 1	0.893	0.885	0.877	0.869
Year 2	0.797	0.783	0.769	0.756
Year3	0.712	0.693	0.675	0.658
Year4	0.636	0.613	0.592	0.572
	3.038	2.974	2.913	2.855

10

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4. Bloomsburg Metal works Inc. has the following elements of capital.
Debt: Bloomsburg issued Rs1,000, thirty year bonds ten years ago at a coupon rate of 9%. Five thousand (5,000) bonds were sold at par. Similar bonds are now selling to yield 11%.
Preferred Stock: Twenty thousand (20,000) shares of 10% preferred stock were sold five years ago at their Rs 100 par value. Similar securities now yield 12%.
Equity: The Company was originally financed with the sale of one million shares of common stock at Rs10. Accumulated retained earnings are currently Rs3 million. The stock is now selling at Rs12.50.
Target Capital Structure:

Debt	20%
Preferred Stock	10%
Equity	70%

Other information:
Bloomsburg's marginal income tax rate is 40%.
Flotation costs average 10% for stocks.
Short term treasury bills currently yield 6%.
An average stock currently yields a return of 13.5%
Bloomsburg's beta is 1.5.

The firm is expected to grow at 6.0% indefinitely.

The annual dividend paid last year was Rs1.10 per share.

Next year's business plan includes earnings of Rs2 million of which Rs1.4 million will be retained .

Calculate Bloomsburg's capital component weights and its WACC before and after the retained earnings break. Sketch the firm's MCC. 10

5 (a) Calculate the optimum cash strategy under the following alternatives

Minimum cash balance =Rupees 10,000

Variance of daily cash flows= 6,250,000

Interest rate=.025 percent per day

Tractions cost for each sale of purchase of securities= Rupees 20. 5

(b) Should corporations pay their shareholders through dividends or by repurchasing their shares, which is the least costly form of payout from tax perspective? Comment. Explain the irrelevance theories of Dividends. 5

6 (a) The present credit terms of multimedia company are 2/15, net 45. Its sales are Rs. 200 million, its average collection period, ACP, is 30 days, its variable cost to the sales

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ratio, V, is 0.80, and its cost of capital, k, is 12 percent. The proportion of sales on which customers currently take discount, p_0, is, 0.5. Multimedia is considering relaxing its discount terms to 3/15, net 45. Such a relaxation is expected to increase sale by Rs. 10 million, reduce the ACP to 27 days, and increase the proportion of discount sales to 0.6. Multimedia's tax rate is 40 percent. What will be the effect of liberalizing the Cash Discount on residual income? 5

(b) Companies U and L are identical in every respect except that U is unlevered while L has $ 10 million of 5% bonds outstanding. Assume (1) that all of the MM assumptions are met, (2) that there are no corporate or personal taxes, (3) that EBIT is $ 2 million, and (4) that the cost of equity to company U is 10%.

a. What value would MM estimate for each firm?
b. What is r_s for firm U? For firm L?
c. Find s_L and then show that $s_L + D = V_L = \$20\ million.$
d. What is the WACC for Firm U? For firm L?
e. Suppose $V_u = \$20\ million\ and\ V_L = \$22\ million.$ According to MM, do these values represent equilibrium? If not, explain the process by which equilibrium would be resorted. 5

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