Spring 2024 Name:

Final Exam: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open-book, open-notes exam.

1. You have been asked to analyze Canyon Group, a publicly traded company in two businesses. The following table summarizes the estimated values of the two businesses, and the firm's funding mix (in $ millions):

Assets (in market value terms)		Liabilities & Equity (market value)	
Food	$800.00	Debt	$200.00
Hotels	$200.00	Equity	$800.00

Canyon Group currently has a levered beta of 0.95 and faces a marginal tax rate of 25%. Canyon Group is planning to sell its hotel business at fair value (estimated above), which has an unlevered beta of 1.20, and pay off the debt outstanding. Estimate the **beta for Canyon after the divestiture**. (3 points)

2. Robert Furnishings is a publicly traded company, with 80 million shares outstanding, trading at $10 a share. The company has no conventional debt, but it does have contractual commitments of $100 million a year for the next five years. The unlevered beta of furnishing companies is 1.20, the marginal tax rate is 25% and the company has a bond rating of A (with a default spread of 1.10%). If the riskfree rate is 4.50% and the equity risk premium is 5%, **estimate the cost of capital for the firm**. (3 points)

3. Libertini's Restaurant is considering switching from using DoorDash, largely because they lose 10% of their revenues to Doordash, to their own delivery app, with lower revenues but with all revenues accruing to the restaurant. The table provides a comparison of annual operating numbers, with DoorDash & their own app.

	Continue with DoorDash	*With own app*
Revenues	$500,000.00	$450,000.00
Labor and Materials	$300,000.00	$270,000.00
App share	$50,000.00	$0.00
Operating Income	$150,000.00	$180,000.00

If Libertini's faces a marginal tax rate of 25% and a cost of capital of 10%, **what is the most that Libertini's can afford to spend (right now) on developing its own delivery app**? (You can assume that the <u>app development cost will be expensed immediately</u>, and that the app has a ten-year life). (3 points)

4. You are reviewing the NPV calculated for a project by an analyst and checking for errors. The analyst estimated a net present value of $50 million, but he ignored working capital investments in making the computation. You have estimated the expected revenues and working capital as a percent of revenues below:

	1	2	3	4
Revenues (in $ millions)	$800.00	$1,000.00	$1,250.00	$1,500.00
Working Capital as % of revenues	15.00%	15.00%	10.00%	6.00%

Assuming that working capital investments have to be made at the start of each year, that the working capital can be fully salvaged when the project ends after 4 years and that the cost of capital is 9%, **estimate the corrected NPV for this investment**. (3 points)

5. Galway Inc. is a chemical company that is significantly over levered, with $600 million in debt and $150 million in equity; the pre-tax cost of debt is 10% and the levered beta is 3.15; the company is expected to generate $48 million in earnings before interest and taxes next year. Assume that Galway can raise $450 million in new equity and use all of the proceeds to retire debt, and that this action will bring the pre-tax cost of debt down to 6%. **Estimate the change in the cost of capital from the action.** (The riskfree rate is 4.5%, the equity risk premium is 5% and the marginal tax rate is 25%.) (3 points)

6. Vertigo Movies. is an entertainment company, with 125 million shares trading at $8 per share and debt of $250 million. The company is considering borrowing $225 million and buying back shares at $9 a share. Assuming that this is the rational price for the buyback, i.e., the price that will leave investors indifferent between selling their shares back and holding on to the shares, and the cost of capital after the buyback is 8%, **estimate the cost of capital before the buyback**. (You can assume no growth in savings from the change in your cost of capital) (3 points)

7. You are intrigued by the ex-dividend day price behavior of stocks, and what that behavior tells you about the tax status of investors in the company. You have broken dividend-paying companies into the largest and smallest market cap companies, and collected the following information:

	Largest	Smallest
Average Price Drop per share	$1.80	$0.60
Average Dividend per share	$2.00	$0.75

The capital gains tax rate is 20% for all investors, and dividends are taxed at the ordinary tax rate, but investors who earn less than $50,000 in income are exempt from paying taxes on dividends. If 30% of the investors in the largest companies earn less than $50,000, **estimate the percentage of investors in the smallest companies that earn less than $50,000**. (4 points)

8. You are trying to assess dividend policy and cash accumulation at Linwood Inc, and have collected the following information:

	Most recent year	1	2
Revenues (in $ millions)	$1,000.00	$1,200.00	$1,500.00
Net margin	5.00%	7.50%	10.00%
Depreciation (in millions)	$40.00	$50.00	$60.00
Payout Ratio	20.00%	40.00%	60.00%

You expect capital expenditures to be 120% of depreciation and non-cash working capital to remain at 5% of revenues (the current level) for the next two years. If the cash balance at the end of the most recent year is $33 million (after the payment of dividends that year), **estimate the expected cash balance at the end of year 2**. (4 points)

9. Roebuck Inc. is a mature firm, which expects to generate $240 million in after-tax operating income, with depreciation of $90 million and capital expenditures of $150 million, next year; there is no working capital need. The company currently has book value of equity in $1800 million, debt (book and market) of $900 million and a cash balance of $300 million. You can assume that the company will maintain its current return on capital and reinvestment rate in perpetuity and face a cost of capital of 7.50%. **Estimate the value of equity today**. (4 points)