

國立臺北商業技術學院 99 學年度研究所碩士班考試入學試題

准考證號碼：□□□□□□ (請考生自行填寫)

財務金融系碩士班

筆試科目：財務管理

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注意事項	1. 本科目合計 100 分，答錯不倒扣。 2. 請於答案卷上依序作答，並標註清楚題號 (含小題)。 3. 考完請將答案卷及試題一併繳回。
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1. Consider two firms, A\_Lev and B\_Unlev, that have identical assets that generate identical cash flows. A\_Lev is an all-equity firm, with 1 million shares outstanding that trade for a price of \$20 per share. B\_Unlev has 2 million shares outstanding and \$10 million dollars in debt at an interest rate of 4%. Assume that MM's perfect capital markets conditions are met and that you can borrow and lend at the same 4% rate as A\_Lev. You have \$5000 of your own money to invest and you plan on buying A\_Lev stock. Using homemade leverage, how much do you need to invest at the risk-free rate so that the payoff of your account will be the same as a \$5000 investment in B\_Unlev stock? (10 分)

2. TSMC Corp. expected to have free cash flow in the coming year of \$6 million, and this free cash flow is expected to grow at a rate of 2% per year thereafter. TSMC Corp. has an equity cost of capital of 12%, a debt cost of capital of 6%, and it is in the 35% corporate tax bracket. If TSMC Corp. currently maintains a 0.5 debt to equity ratio, then what's the value of TSMC as a levered firm? (10 分)

3. UMC Co. is ready to launch a new product. Depending upon the success of this product, UMC Co. will have a value of either \$150 million, \$200 million, or \$250 million, with each outcome being equally likely. The cash flows are unrelated to the state of the economy (i.e. risk from the project is diversifiable) so that the project has a beta of 0 and a cost of capital equal to the risk-free rate, which is currently 4%. Assume that the capital markets are perfect. Assume that in the event of default, 25% of the value of UMC assets will be lost in bankruptcy costs and suppose that UMC has zero-coupon debt with a \$170 million face value due next year. What's the yield to maturity of UMC debt? (10 分)

背面尚有試題

4. HTC Co. has \$60 million in excess cash and no debt. The firm expects to generate additional free cash flows of \$50 million per year in subsequent years and will pay out these future free cash flows as regular dividends. HTC Co. unlevered cost of capital is 8% and there are 10 million shares outstanding. HTC's board is meeting to decide whether to pay out its \$60 million in excess cash as a special dividend or to use it to repurchase shares of the firm's stock. Assume that HTC Co. uses the entire \$60 million to repurchase shares. What's the number of shares that HTC Co. will repurchase? (10 分)

5. Suppose EVA Corp. is considering divesting one of its product lines. The product line is expected to generate free cash flows of \$4 million per year, growing at a rate of 3% per year. EVA Corp. has an equity cost of capital of 10%, a debt cost of capital of 7%, a marginal tax rate of 35%, and a debt-equity ratio of 2. This product line is of average risk and EVA Corp. plans to maintain a constant debt-equity ratio. What's the unlevered value of EVA's Product Line? (10 分)

6.(10 分)假設某選擇權交易所交易的個股歐式買權(European Call Options)的到期日是半年之後，履約價格為 100 元，標的個股今天的收盤價格為 110 元，無風險資產年報酬率為 2%，買權今天的收盤價格為 10 元。則在股票市場與選擇權市場皆為完美(融資融券無限制與成本、無交易成本)之下，是否有套利的機會？

7.(10 分)假設某選擇權交易所交易的個股歐式賣權(European Put Options)的到期日是 1 年之後，履約價格為 100 元，標的個股今天的收盤價格已跌到 0 元，無風險資產年報酬率為 1%。則在股票市場與選擇權市場皆為完美(融資融券無限制與成本、無交易成本)之下，說明此賣權的時間價值是否可能為負？又歐式買權(European Call Options)的時間價值是否可能為負？

8. 某公司某會計年度的年資產負債表與損益表如下(單位：億元)，假設公司因有稅賦上的優惠而免營利事業所得稅。

	資產負債表				損益表		
	Y 年 底	Y+1 年 底	Y 年 底	Y+1 年 底	Y+1 年		
現金	1	2	應付帳款	1	2	銷貨收入	10
應收 帳款	2	3	一年以上長 期負債	3	4	銷貨成本與 營業費用	(4)
存貨	3	2	負債總和	4	6	折舊	(1)
固定 資產	4	5	股東權益	6	6	息前利潤	5
總資 產	<u>10</u>	<u>12</u>		<u>10</u>	<u>12</u>	利息費用	(1)
						稅前盈餘	<u>4</u>

一年以 365 天計算之下，求算以下財務比率：

(1) (8 分)現金週期(Cash Cycle)

(2) (4 分)Y+1 年之現金涵蓋比率(Cash Coverage Ratio)

(3) (4 分)Y+1 年(總資產以兩年底平均資料計算)之總資產報酬率(Return on Asset, ROA)

(4) (4 分)Y+1 年(淨值以兩年底平均資料計算)之淨值周轉率(Equity Turnover)

9.(10 分)假設台灣證券交易所某上市公司普通股，某日盤中某一次撮合前的所有未成交單如下(上一次撮合的價格是 60.6 元)：

	限價單					
	60.1 元	60.2 元	60.3 元	60.4 元	60.5 元	60.6 元
買單(單位：張)	3	1	0	3	3	3
賣單(單位：張)	4	3	2	1	0	1

若依照交易所現行的集合競價(Call Auction)方式撮合，請問：此次撮合價格、成交數量、撮合後未成交的賣單中的最低限價各為何？