

注意：考試開始鈴響前，不得翻閱試題，  
並不得書寫、畫記、作答。

國立清華大學 108 學年度碩士班考試入學試題

系所班組別：計量財務金融學系 甲組

考試科目(代碼)：財務管理(5004)

### — 作答注意事項 —

1. 請核對答案卷(卡)上之准考證號、科目名稱是否正確。
2. 作答中如有發現試題印刷不清，得舉手請監試人員處理，但不得要求解釋題意。
3. 考生限在答案卷上標記「由此開始作答」區內作答，且不可書寫姓名、准考證號或與作答無關之其他文字或符號。
4. 答案卷用盡不得要求加頁。
5. 答案卷可用任何書寫工具作答，惟為方便閱卷辨識，請儘量使用藍色或黑色書寫；答案卡限用 2B 鉛筆畫記；如畫記不清(含未依範例畫記)致光學閱讀機無法辨識答案者，其後果一律由考生自行負責。
6. 其他應考規則、違規處理及扣分方式，請自行詳閱准考證明上「國立清華大學試場規則及違規處理辦法」，無法因本試題封面作答注意事項中未列明而稱未知悉。

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一、單選題 40%。共 10 題，每題 4 分。（請在答案卷作答）

1. Which of the following statements is CORRECT?
  - A. Since depreciation is not a cash expense, it plays no role in capital budgeting.
  - B. Under current laws and regulations, corporations must use straight line depreciation for all assets whose lives are 3 years or longer.
  - C. Under MACRS depreciation, firms write off assets slower than they would under straight line depreciation, and as a result projects' forecasted NPVs are normally lower than they would be if straight line depreciation were permitted for tax purposes.
  - D. Under MACRS depreciation, firms can write off assets faster than they could under straight line depreciation, and as a result projects' forecasted NPVs are normally lower than they would be if straight line depreciation were permitted for tax purposes.
  - E. Under MACRS depreciation, firms can write off assets faster than they could under straight line depreciation, and as a result projects' forecasted NPVs are normally higher than they would be if straight line depreciation had to be used for tax purposes.
  
2. Which of the following is not an assumption used in deriving the Capital Asset Pricing Model?
  - A. Investors have homogeneous expectations regarding the volatilities, correlation, and expected returns of securities.
  - B. Investors have homogeneous risk adverse preferences toward taking on risk.
  - C. Investors hold only efficient portfolios of traded securities that are portfolios that yield the maximum expected return for the given level of risk.
  - D. Investors can buy and sell all securities at competitive market prices without incurring taxes or transactions cost and can borrow and lend at the risk-free interest rate.
  - E. None of the above.
  
3. Which of the following statements is CORRECT?
  - A. If the returns on two stocks are perfectly positively correlated and the stocks have equal standard deviations, an equally weighted portfolio of the two stocks will have a standard deviation that is less than that of the individual stocks.
  - B. If a stock has a negative beta, its expected return must be negative.
  - C. According to the CAPM, stocks with higher standard deviations of returns will have higher expected returns.
  - D. A portfolio with a large number of randomly selected stocks would have more market risk than a single stock that has a beta of 2.

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- E. If two stocks were combined to form a 2-stock portfolio, the portfolio's expected return would be a weighted average of the stocks' expected returns, but the portfolio's standard deviation would probably be smaller than the average of the stocks' standard deviations.
4. Which of the following statements about dividend policies is correct?
- A. Modigliani and Miller argue that investors prefer dividends to capital gains because dividends are more certain than capital gains. They call this the "bird-in-the hand" effect.
  - B. One reason that companies tend to avoid stock repurchases is that dividend payments are taxed at a lower rate than stock repurchases.
  - C. In general, a dollar paid out to repurchase stock will be taxed at the same rate as a dollar paid out in dividends.
  - D. One key advantage of a residual dividend policy is that it enables a company to follow a stable dividend policy.
  - E. The clientele effect suggests that companies should follow a stable dividend policy.
5. The combination of the efficient set of portfolios with a riskless lending and borrowing rate results in:
- A. the capital market line which shows that all investors will only invest in the riskless asset.
  - B. the capital market line which shows that all investors will invest in a combination of the riskless asset and the tangency portfolio.
  - C. the security market line which shows that all investors will invest in the riskless asset only.
  - D. the security market line which shows that all investors will invest in a combination of the riskless asset and the tangency portfolio.
  - E. None of the above.
6. The WACC approach to valuation is not as useful as the Adjusted present value (APV) approach in leveraged buyouts because:
- A. there is greater risk with a LBO.
  - B. the capital structure is changing.
  - C. there is no tax shield with the WACC.
  - D. the value of the levered and unlevered firms are equal.
  - E. the unlevered and levered cash flows are separated which cannot be used with the WACC approach.
7. A project will increase sales by \$60,000 and cash expenses by \$51,000. The project will cost \$40,000 and will be depreciated using straight-line depreciation to a zero book value over the 4-

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year life of the project. The company has a marginal tax rate of 35%. What is the operating cash flow of the project using the tax shield approach?

A. \$5,850      B. \$8,650      C. \$9,350      D. \$9,700      E. \$10,350

8. Which of the following cash flows is not relevant when using the WACC method to evaluate a project?
- A. interest expense                      B. depreciation                      C. tax  
D. operating cash flows                  E. increment of account payable.
9. The option to abandon a project investing in real assets can be considered to have a strike price equal to the:
- A. historical cost of the asset.              B. market value of the asset at abandonment.  
C. forgone revenues anticipated from the project.      D. forgone interest on the bonds used to finance the real assets.
10. Warrants are similar to traded options except:
- A. only warrants have exercise prices.  
B. only warrants depend on changes in the underlying stock to determine value.  
C. warrants affect the number of shares outstanding.  
D. Both A and C.                              E. Both A and B.

二、問答題 60%，共 3 題（請在答案紙本上作答）

1. (20%) 請說明MM(1958)年推論得出的定理：不論有無舉債，公司價值皆相同 $V_U = V_L$ ，L公司權益成本 $R_{SL} = R_{SU} + \frac{D}{S}(R_{SU} - R_D)$ ，背後所需使用的假設。上述符號定義如下：

$V_U$  : Unleveraged firm value

$V_L$  : Leveraged firm value

$R_{SU}$  : 無舉債公司的權益成本

$R_{SL}$  : 有舉債公司的權益成本

$S_U$  : Equity of unleveraged firm

$S_L$  : Equity of leveraged firm

其中， $V_U = S_U$ ， $V_L = D + S_L$ 。

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2. (15%) Denote the bond price as  $P$ , coupon payments as  $C$ , yield to maturity as  $y$  and time to maturity as  $T$ . Please show that “the higher time to maturity, the higher interest rate risk of the bond”.

3. (25%) 代表性個人假設 A 股票與大盤 M 的報酬率機率分配如下：

經濟景氣	發生機率	$R_A$	$R_M$
繁榮	0.3	20%	10%
正常	0.5	8%	6%
衰退	0.2	-10%	-2%

- (a) 根據上述機率分佈，計算 A 股票的期望報酬率。(5%)
- (b) 計算 A 股票的  $\beta$  值。(5%)
- (c) 若 CAPM 成立，無風險利率 2%，請根據  $\beta_A$  計算 A 股票的必要報酬率。(5%)
- (d) 請問(c)和(a)是否相同？若不同，請解原因。(10%)