

※ 考生請注意：本試題可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

Section A: Multiple Choice Questions (80 marks, 4 points each)

1. Which of the following statements is CORRECT?
 - a. In most corporations, the CFO ranks above the CEO.
 - b. By law in most states, the chairman of the board must also be the CEO.
 - c. The board of directors is the highest ranking body in a corporation, and the chairman of the board is the highest ranking individual. The CEO generally works under the board and its chairman, and the board generally has the authority to remove the CEO under certain conditions. The CEO, however, cannot remove the board, but he or she can endeavor to have the board voted out and a new board voted in should a conflict arise. It is possible for a person to simultaneously serve as CEO and chairman of the board, though many corporate control experts believe it is bad to vest both offices in the same person.
 - d. The CFO generally reports to the firm's chief accounting officer, who is normally the controller.
 - e. The CFO is responsible for raising capital and for making sure that capital expenditures are desirable, but he or she is not responsible for the validity of the financial statements, as the controller and the auditors have that responsibility.

2. Companies HD and LD have the same total assets, sales, operating costs, and tax rates, and they pay the same interest rate on their debt. However, company HD has a higher debt ratio. Which of the following statements is CORRECT?
 - a. Given this information, LD must have the higher ROE.
 - b. Company LD has a higher basic earning power ratio (BEP).
 - c. Company HD has a higher basic earning power ratio (BEP).
 - d. If the interest rate the companies pay on their debt is more than their basic earning power (BEP), then Company HD will have the higher ROE.
 - e. If the interest rate the companies pay on their debt is less than their basic earning power (BEP), then Company HD will have the higher ROE.

3. Which of the following statements is CORRECT?
- Downward-sloping yield curves are inconsistent with the expectations theory.
 - The actual shape of the yield curve depends only on expectations about future inflation.
 - If the pure expectations theory is correct, a downward-sloping yield curve indicates that interest rates are expected to decline in the future.
 - If the yield curve is upward sloping, the maturity risk premium must be positive and the inflation rate must be zero.
 - Yield curves must be either upward or downward sloping--they cannot first rise and then decline.
4. Short Corp just issued bonds that will mature in 10 years, and Long Corp issued bonds that will mature in 20 years. Both bonds promise to pay a semiannual coupon, they are not callable or convertible, and they are equally liquid. Further assume that the Treasury yield curve is based only on the pure expectations theory. Under these conditions, which of the following statements is CORRECT?
- If the yield curve for Treasury securities is flat, Short's bond must under all conditions have the same yield as Long's bonds.
 - If the yield curve for Treasury securities is upward sloping, Long's bonds must under all conditions have a higher yield than Short's bonds.
 - If Long's and Short's bonds have the same default risk, their yields must under all conditions be equal.
 - If the Treasury yield curve is upward sloping and Short has less default risk than Long, then Short's bonds must under all conditions have a lower yield than Long's bonds.
 - If the Treasury yield curve is downward sloping, Long's bonds must under all conditions have the lower yield.
5. Stock A has an expected return of 10% and a standard deviation of 20%. Stock B has an expected return of 13% and a standard deviation of 30%. The risk-free rate is 5% and the market risk premium, $r_M - r_{RF}$, is 6%. Assume that the market is in equilibrium. Portfolio AB has 50% invested in Stock A and 50% invested in Stock B. The returns of Stock A and Stock B are independent of one another, i.e., the correlation coefficient between them is zero. Which of the following statements is CORRECT?

- a. Stock A's beta is 0.8333.
- b. Since the two stocks have zero correlation, Portfolio AB is riskless.
- c. Stock B's beta is 1.0000.
- d. Portfolio AB's required return is 11%.
- e. Portfolio AB's standard deviation is 25%.

6. Agarwal Technologies was founded 10 years ago. It has been profitable for the last 5 years, but it has needed all of its earnings to support growth and thus has never paid a dividend. Management has indicated that it plans to pay a \$0.25 dividend 3 years from today, then to increase it at a relatively rapid rate for 2 years, and then to increase it at a constant rate of 8.00% thereafter. Management's forecast of the future dividend stream, along with the forecasted growth rates, is shown below. Assuming a required return of 11.00%, what is your estimate of the stock's current value?

Year	0	1	2	3	4	5	6
Growth rate	NA	NA	NA	NA	50.00%	25.00%	8.00%
Dividends	\$0.000	\$0.000	\$0.000	\$0.250	\$0.375	\$0.469	\$0.506

- a. \$ 9.94
 - b. \$10.19
 - c. \$10.45
 - d. \$10.72
 - e. \$10.99
7. The risk-free rate is 6% and the market risk premium is 5%. Your \$1 million portfolio consists of \$700,000 invested in a stock that has a beta of 1.2 and \$300,000 invested in a stock that has a beta of 0.8. Which of the following statements is CORRECT?
- a. If the stock market is efficient, your portfolio's expected return should equal the expected return on the market, which is 11%.
 - b. The required return on the market is 10%.
 - c. The portfolio's required return is less than 11%.
 - d. If the risk-free rate remains unchanged but the market risk premium increases by 2%, your

portfolio's required return will increase by more than 2%.

- e. If the market risk premium remains unchanged but expected inflation increases by 2%, your portfolio's required return will increase by more than 2%.

8. Which of the following statements is CORRECT?

- a. In general, a firm with low operating leverage also has a small proportion of its total costs in the form of fixed costs.
- b. There is no reason to think that changes in the personal tax rate would affect firms' capital structure decisions.
- c. A firm with a relatively high business risk is more likely to increase its use of financial leverage than a firm with low business risk, assuming all else equal.
- d. If a firm's after-tax cost of equity exceeds its after-tax cost of debt, it can always reduce its WACC by increasing its use of debt.
- e. Suppose a firm has less than its optimal amount of debt. Increasing its use of debt to the point where it is at its optimal capital structure will decrease the costs of both debt and equity.

9. Projects S and L are equally risky, mutually exclusive, and have normal cash flows. Project S has an IRR of 15%, while Project L's IRR is 12%. The two projects have the same NPV when the WACC is 7%. Which of the following statements is CORRECT?

- a. If the WACC is 10%, both projects will have positive NPVs.
- b. If the WACC is 6%, Project S will have the higher NPV.
- c. If the WACC is 13%, Project S will have the lower NPV.
- d. If the WACC is 10%, both projects will have a negative NPV.
- e. Project S's NPV is more sensitive to changes in WACC than Project L's.

10. Which of the following statements is CORRECT? Assume that the project being considered has normal cash flows, with one outflow followed by a series of inflows.

- a. A project's MIRR is always greater than its regular IRR.
- b. A project's MIRR is always less than its regular IRR.
- c. If a project's IRR is greater than its WACC, then the MIRR will be less than the IRR.

- d. If a project's IRR is greater than its WACC, then the MIRR will be greater than the IRR.
- e. To find a project's MIRR, we compound cash inflows at the IRR and then discount the terminal value back to $t = 0$ at the WACC.

11. Currently, Powell Products has a beta of 1.0, and its sales and profits are positively correlated with the overall economy. The company estimates that a proposed new project would have a higher standard deviation and coefficient of variation than an average company project. Also, the new project's sales would be countercyclical in the sense that they would be high when the overall economy is down and low when the overall economy is strong. On the basis of this information, which of the following statements is CORRECT?

- a. The proposed new project would have more stand-alone risk than the firm's typical project.
- b. The proposed new project would increase the firm's corporate risk.
- c. The proposed new project would increase the firm's market risk.
- d. The proposed new project would not affect the firm's risk at all.
- e. The proposed new project would have less stand-alone risk than the firm's typical project.

12. Vasudevan Inc. forecasts the free cash flows (in millions) shown below. If the weighted average cost of capital is 13% and the free cash flows are expected to continue growing at the same rate after Year 3 as from Year 2 to Year 3, what is the Year 0 value of operations, in millions?

Year:	1	2	3
Free cash flow:	-\$20	\$42	\$45

- a. \$586
- b. \$617
- c. \$648
- d. \$680
- e. \$714

13. Which of the following actions will best enable a company to raise additional equity capital?
- Refund long-term debt with lower cost short-term debt.
 - Declare a stock split.
 - Begin an open-market purchase dividend reinvestment plan.
 - Initiate a stock repurchase program.
 - Begin a new-stock dividend reinvestment plan.
14. Autore Company's stock now sells for \$50 per share, and there are 10,000,000 shares outstanding. The company plans to raise \$100 million as new equity by selling common stock. Since the preemptive right is in the corporate charter, rights will be used. Management has decided that the rights should be worth \$1 each: Such a price would assure that most stockholders would either exercise or sell their rights rather than just letting them expire, yet a careless failure to use the rights would not impose too severe a hardship on anyone. What subscription price should Autore set for its offering to obtain the desired price of the rights, and what will be the ex-rights stock price (M_e), assuming the theoretical relationships hold? (Hint: $N = \text{Number of old shares} / \text{Number of new shares}$; $\text{Number of new shares} = \text{Dollars to be raised} / \text{Subscription price per share}$.)
- | | <u>Sub Price</u> | <u>Ex-rights</u> |
|----|------------------|------------------|
| a. | \$39.65; | \$42.50 |
| b. | \$40.25; | \$43.50 |
| c. | \$42.65; | \$47.50 |
| d. | \$44.55; | \$49.00 |
| e. | \$46.65; | \$50.00 |
15. Suppose a U.S. firm buys \$200,000 worth of television tubes from a Mexican manufacturer for delivery in 60 days with payment to be made in 90 days (30 days after the goods are received). The rising U.S. deficit has caused the dollar to depreciate against the peso recently. The current exchange rate is 5.50 pesos per U.S. dollar. The 90-day forward rate is 5.45 pesos/dollar. The firm goes into the forward market today and buys enough Mexican pesos at the 90-day forward rate to completely cover its trade obligation. Assume the spot rate in 90 days is 5.30 Mexican pesos per U.S. dollar. How much in U.S. dollars did the firm save by eliminating its foreign exchange

currency risk with its forward market hedge?

- a. \$0
- b. \$1,834.86
- c. \$4,517.26
- d. \$5,712.31
- e. \$7,547.17

16. Which of the following statements is most CORRECT?

- a. The acquiring firm's required rate of return in most horizontal mergers will not be affected, because the 2 firms will have similar betas.
- b. Financial theory says that the choice of how to pay for a merger is really irrelevant because, although it may affect the firm's capital structure, it will not affect its overall required rate of return.
- c. The basic rationale for any financial merger is synergy and, thus, the estimation of proforma cash flows is the single most important part of the analysis.
- d. In most mergers, the benefits of synergy and the premium the acquirer pays over the market price are summed and then divided equally between the shareholders of the acquiring and target firms.
- e. The primary rationale for most operating mergers is synergy.

17. Chen Transport, a U.S. based company, is considering expanding its operations into a foreign country. The required investment at Time = 0 is \$10 million. The firm forecasts total cash inflows of \$4 million per year for 2 years, \$6 million for the next 2 years, and then a possible terminal value of \$8 million. In addition, due to political risk factors, Chen believes that there is a 50% chance that the gross terminal value will be only \$2 million and a 50% chance that it will be \$8 million. However, the government of the host country will block 20% of all cash flows. Thus, cash flows that can be repatriated are 80% of those projected. Chen's cost of capital is 15%, but it adds one percentage point to all foreign projects to account for exchange rate risk. Under these conditions, what is the project's NPV?

- a. \$1.01 million
- b. \$2.77 million

- c. \$3.09 million
- d. \$5.96 million
- e. \$7.39 million

18. Which of the following statements is most CORRECT?

- a. Firms that use "off balance sheet" financing, such as leasing, would show lower debt ratios if the effects of their leases were reflected in their financial statements.
- b. Capitalizing a lease means that the firm issues equity capital in proportion to its current capital structure, in an amount sufficient to support the lease payment obligation.
- c. The fixed charges associated with a lease can be as high as, but never greater than, the fixed payments associated with a loan.
- d. Capital, or financial, leases generally provide for maintenance by the lessor.
- e. A key difference between a capital lease and an operating lease is that with a capital lease, the lease payments provide the lessor with a return of the funds invested in the asset plus a return on the invested funds, whereas with an operating lease the lessor depends on the residual value to realize a full return of and on the investment.

19. Upstate Water Company just sold a bond with 50 warrants attached. The bonds have a 20-year maturity and an annual coupon of 12%, and they were issued at their \$1,000 par value. The current yield on similar straight bonds is 15%. What is the implied value of each warrant?

- a. \$3.76
- b. \$3.94
- c. \$4.14
- d. \$4.35
- e. \$4.56

20. Lighthouse Corporation uses the NPV method for selecting projects, and it does a reasonably good job of estimating projects' sales and costs. However, it never considers real options that might be associated with projects. Which of the following statements is most likely to describe its situation?
- Its estimated capital budget is probably too small, because projects' NPVs are often larger when real options are taken into account.
 - Its estimated capital budget is probably too large due to its failure to consider abandonment and growth options.
 - Failing to consider abandonment and flexibility options probably makes the optimal capital budget too large, but failing to consider growth and timing options probably makes the optimal capital budget too small, so it is unclear what impact not considering real options has on the overall capital budget.
 - Failing to consider abandonment and flexibility options probably makes the optimal capital budget too small, but failing to consider growth and timing options probably makes the optimal capital budget too large, so it is unclear what impact not considering real options has on the overall capital budget.
 - Real options should not have any effect on the size of the optimal capital budget.

Section B: Essay Questions (20 marks, 10 points each)

- Suppose that a company simultaneously issues a zero-coupon bond and a coupon bond with identical maturities. Both are callable at any time at their face values. Other things equal, which is likely to offer the higher yield? Why? Please provide your answer in English ONLY.
- Why do some firms choose stock repurchases over cash dividends? Please provide your rationales in English ONLY to support your position.