

Managerial Finance (NCC 5060)

Professor Gideon Saar

Sample Exemption Exam

Student Name: _____

There are 30 questions in this part of the exam. Answer all questions. Read all of the possible choices and then circle with a PEN on the ANSWER SHEET in the back of the exam the most correct answer from among the available choices. You must make sure that I can understand which answer you have marked. If I cannot determine that for sure, you will not receive points for the answer. Return the exam and all workbooks. The sheet of paper with material that you have brought into the exam will also be collected.

1. Aunt Clarisse has promised to leave you an inheritance that will pay \$60 next year and grow at an annual rate of 4%. The payments are expected to go on indefinitely and you discount future cash flows at an interest rate of 9%. What is the value of your inheritance?

- (a). \$667
- (b). \$693
- (c). \$1,200
- (d). \$1,248

2. Which of the following statements is true?

- (a). One must know the discount rate to compute the NPV of a project but one can compute the IRR without referring to the discount rate.
- (b). One must know the discount rate to compute the IRR of a project but one can compute the NPV without referring to the discount rate.
- (c). Payback period method accounts for the time value of money.
- (d). There will always be one IRR regardless of cash flows.

3. KDT Inc. is a market leader in a mature industry and hence produces a steady stream of free cash flows (\$100 million per year) but does not grow. You believe that given its prominent position, KDT can continue to generate this cash flow indefinitely. Your estimate of KDT's WACC is 9.6%. The firm's debt is currently valued at \$120 million. KDT currently holds \$50 million in excess cash. If KDT has twenty million shares outstanding, what should the stock price be?

- (a). \$13.5
- (b). \$5
- (c). \$52.08
- (d). \$48.58

4. Salamander SUP Inc. is a designer and manufacturer of high-performance stand up paddle boards (SUPs). In 2014 it went public and currently has 2,400,000 shares of common stock outstanding. Salamander's shares are traded on NASDAQ, and yesterday's closing price was \$13.15. Salamander issued bonds in 2016 with coupon rate of 7.4% (semiannual coupons). The yield to maturity (quoted as an APR) on the bonds is currently 5.65%, and the market value of the bonds outstanding is \$6,710,000. The firm's marginal tax rate is 40%. The risk-free rate in the economy is 2.37%, the beta of Salamander is estimated to be 1.46, and you believe the market risk premium is 5.75%. What is Salamander's WACC?

- (a). 0.0967
- (b). 0.0617
- (c). 0.0948
- (d). 0.0682

5. Consider two bonds, A and B. Both bonds pay an interest of \$120 annually and presently are selling at their par value of \$1,000. Bond A will mature in 5 years while bond B will mature in 6 years. If the yields to maturity on the two bonds change from 12% to 14%, _____.

- (a). both bonds will increase in value but bond A will increase more than bond B
- (b). both bonds will increase in value but bond B will increase more than bond A
- (c). both bonds will decrease in value but bond A will decrease more than bond B
- (d). both bonds will decrease in value but bond B will decrease more than bond A

6. You are considering two loans. The terms of the two loans are equivalent with the exception of the interest rates. Loan A has a rate of 7.45% APR compounded daily. Loan B has a rate of 7.5% APR compounded semi-annually. Loan _____ is the better offer because _____.

- (a). A; you will pay less interest
- (b). A; the annual percentage rate is 7.45%
- (c). B; the annual percentage rate is 7.64%
- (d). B; the effective annual rate is 7.64%

7. Expat and Co. has a bond issue traded in the market with coupon rate of 6.5%, semiannual payments, and a \$1,000 face value. The bond issue matures in 8 years and is currently traded with yield to maturity of 5.8% (APR). What is the market price of the bond?

- (a). \$1000
- (b). \$1,044.30
- (c). \$994.68
- (d). \$1,121.26

8. ABC Company is expected to pay a dividend in year 1 of \$3.00, a dividend in year 2 of \$4.00, and a dividend in year 3 of \$5.00. After year 3, dividends are expected to grow at the rate of 4% per year (i.e., expected dividend in year 4 is \$5.20). An appropriate required return for the stock is 13.5%. Using the multistage dividend discount model, the stock should be worth today

- (a). \$17.20
- (b). \$54.72
- (c). \$46.60
- (d). \$85.60

9. I am a risk-averse individual with mean-variance preferences and I want to implement a passive investment strategy by holding a combination of T-bills and one index fund. I am considering the following three index funds:

Index Fund	Expected Return	Standard Deviation
S&Z1000	16%	15%
S&Y1000	12%	8%
S&W1000	14%	9%

The T-bill rate is 8%. Which index fund should I choose to combine with the T-bills?

- (a) S&Z1000.
- (b) S&Y1000.
- (c) S&W1000.
- (d) There is not enough information to answer this question.

10. Your firm purchased a warehouse for \$350,000 six years ago. Four years ago, repairs were made to the building at a cost of \$60,000. The annual taxes on the property are \$20,000. The warehouse has a current book value of \$273,000 and a market value of \$305,000. The warehouse is totally paid for and solely owned by your firm. If the company decides to assign this warehouse to a new project, what value, if any, should be included in the initial cash flow of the project for this building?

- (a). \$0
- (b). \$273,000
- (c). \$305,000
- (d). \$410,000

11. The beta of stock XYZ is 1.2 and its standard deviation is 10%. The beta of stock ABC is 0.7 and its standard deviation is 20%. The beta of stock GOLD is -0.3 and its standard deviation is 10%. What is the beta of a portfolio that is comprised of 30% in stock XYZ, 20% in stock ABC and 50% in stock GOLD?

- (a). 0.35
- (b). 0.12
- (c). The answer cannot be calculated without knowing the correlation coefficients between the securities.
- (d). 0.53

12. You are considering the following two mutually exclusive projects that will not be repeated. The required rate of return is 11.25% for project A and 10.75% for project B. Which project should you accept and why?

Year	Project A	Project B
0	-\$48,000	-\$126,900
1	\$18,400	\$69,700
2	\$31,300	\$80,900
3	\$11,700	\$0

- (a). project A; because its NPV is about \$335 more than the NPV of project B.
- (b). project A; because it has the higher required rate of return.
- (c). project B; because it has the largest total cash inflow.
- (d). project B; because it returns all its cash flows within two years.

13. Consider a firm that is financed solely with equity. The ROE on the firms' project is 13%. The beta of the firm is 2, and you assume that the risk free-rate is 2% and the equity risk premium is 5.5%. If the firm increases its dividends, the value of the firm should

- (a). Go up.
- (b). Go down.
- (c). Not change.
- (d). There is not enough information to answer this question.

14. The yield to maturity on a bond with annual coupons is

- (a) above the coupon rate when the bond sells at a discount, and below the coupon rate when the bond sells at a premium.
- (b). the discount rate that will set the present value of the payments equal to the bond price.
- (c). equal to the true compound return on investment only if all interest payments received are reinvested at the yield to maturity.
- (d). all of the above.

15. The expected return on stock XYZ is 25% and its standard deviation is 40%. The expected return on stock ABC is 15% and its standard deviation is 20%. Assume that the correlation between the two stocks is 0.5. What are the expected return and standard deviation of a portfolio with 80% invested in stock XYZ and 20% invested in stock ABC?

- (a). $E(r)=23\%$, $\sigma=34.18\%$
- (b). $E(r)=23\%$, $\sigma=12.08\%$
- (c). $E(r)=20\%$, $\sigma=30\%$
- (d). $E(r)=23\%$, $\sigma=36\%$

16. Your uncle dies and leaves you as the beneficiary of a life insurance policy. The insurance company informs you that you have two options for receiving the insurance proceeds: a lump sum of \$60,000 today or payments of \$730 a month for ten years. You believe that you can earn 6.5% effective annual rate by investing your money. Which option should you take and why?

- (a). You should accept the monthly payments because they are worth \$64,310 today.
- (b). You should accept the monthly payments because they are worth \$64,829 today.
- (c). You should accept the \$60,000 because the payments are only worth \$56,737 today.
- (d). You should accept the \$60,000 because the payments are only worth \$56,453 today.

17. A firm is expected to pay a dividend of \$4.20 in the upcoming year. Dividends are expected to grow at 8% per year. The risk free rate of return is 4% and the expected return on the market portfolio is 14%. The stock's current price is \$84.00. Using the constant growth model, the required return on the stock is

- (a). 9%
- (b). 12%
- (c). 13%
- (d). 18%

18. Portfolio A is a combination of the risk free asset and the market portfolio. The standard deviation of portfolio A is 24%, and its beta is 0.8. The standard deviation of the market portfolio is 30%. What is the correlation of portfolio A and the market portfolio?

- (a). 0.8
- (b). 0.61
- (c). 1
- (d). There is not enough information to answer this question.

19. You have saved \$1,000,000 for retirement already, and you are currently saving \$2,000 at the end of every month (in after-tax dollars). You intend to continue to save at the same pace for the next decade, and then retire. If you want your money to last 40 years, what fixed amount can you withdraw every month during retirement? Assume an effective annual rate of 4% both now and during retirement.

- (a). \$4,463
- (b). \$5,348
- (c). \$5,410
- (d). \$7,334

20. Which of the following is an advantage of DCF models?

- (a). You can obtain a precise estimate.
- (b). Inputs cannot be biased.
- (c). You are guaranteed to find undervalued firms.
- (d). It should be less exposed to market sentiments and perceptions.

21. The best (or optimal) Capital Allocation Line

- (a). is tangent to the portfolio frontier.
- (b). has the highest reward-to-variability ratio.
- (c). is comprised of efficient portfolios.
- (d). all of the above.

22. The CAPM implies that

- (a). all risky assets should have an expected return higher than the risk free rate.
- (b). there can be risky assets with an expected return lower than the risk free rate.
- (c). all assets must have the same expected return.
- (d). the expected return and variance (but not correlation) of all assets are the same in equilibrium.

23. PJI Inc. is a young firm listed on NASDAQ with market capitalization of \$750 million. Currently PJI has no interest-bearing debt, and its equity beta is 1.35. PJI wants to raise \$150 million by issuing 10-year bonds. The risk-free rate you use for your cost of equity calculations is 2.25%, and the equity risk premium is 5.75%. PJI's tax rate is 35%. What is your estimate of the change in the cost of equity of PJI as a result of raising money with the bond issue?

- (a). It is going to increase by 0.822%.
- (b). It is going to increase by 1.009%.
- (c). It is going to decrease by 1.525%.
- (d). It is not going to change: the cost of equity is independent of the capital structure.

24. Firms that produce and sell non-discretionary products (e.g., tobacco) usually have
- (a). a higher cost of equity due to litigation risk.
 - (b). a higher cost of equity because the equity risk premium is higher.
 - (c). a lower cost of equity because their beta is lower.
 - (d). either a lower or a higher cost of equity (there should not be any relationship between the type of product a firm is producing and the cost of equity).

25. You want to buy an industrial boiler to heat your factory, and you are considering two potential boilers. Boiler A costs \$35,000, has an annual maintenance costs of \$4000, and is expected to last 20 years. Boiler B costs \$42,000, has an annual maintenance costs of \$3800, and is expected to last 25 years. Assuming a discount rate of 10%, which boiler would provide you with a better overall deal (taking into account that they would need to be replaced at the end of their expected lives)?

- (a). Boiler A, because its equivalent annual cost is \$316 lower than the EAC of boiler B.
- (b). Boiler B, because its equivalent annual cost is \$512 lower than the EAC of Boiler A.
- (c). Boiler A, because its IRR is 6.78%.
- (d). Boiler B, because its NPV is lower than that of Boiler A.

26. Which of the following statements concerning the standard deviation of any portfolio is correct?

- (a). The standard deviation of a portfolio is equal to a weighted average of the standard deviations of the individual securities held within the portfolio.
- (b). The standard deviation of a portfolio can often be lowered by changing the weights of the securities in the portfolio.
- (c). Standard deviation is used to determine the amount of risk premium that should apply to each security in the portfolio.
- (d). Standard deviation measures only the systematic risk of a portfolio.

27. You have \$10,500 in a bank account that pays 6% effective annual rate. How much time will it take for you to double your money?

- (a). Approximately 11 years, 10 months, and 22 days.
- (b). 12 years.
- (c). Approximately 11 years, 2 months, and 10 days.
- (d). 16 years and 8 months.

28. You are manufacturing and selling display booths for professional exhibitions. Your sales projection is 300 display booths per year for the next two years. Your cost for renting a warehouse and workshop space is \$100,000 per year, and your variable costs per display booth (material and labor) are \$11,500. The equipment to cut and mold the display booth components costs \$1,100,000, depreciated straight line to salvage value of zero over two years. You should be able to sell the used equipment at the end for \$200,000. The tax rate is 34%, and your required return is 17%. What should be the minimum selling price of a display booth?

- (a). \$14,087
- (b). \$13,181
- (c). \$12,870
- (d). There is not enough information to answer this question.

29. The required return on the stock of XYZ Company is 9%. Its expected ROE is 12% and its expected EPS is \$5.00. If the firm's plowback ratio is 40%, its P/E ratio (dividing the price by the expected earnings-per-share) according to the constant growth model will be

- (a). 7.14
- (b). 14.29
- (c). 16.67
- (d). 22.22

30. According to the CAPM, the weight on a stock in the market portfolio

- (a). is the market value of the stock (price times the number of shares outstanding) divided by the value of all assets in the market.
- (b). is the number of shares of the stock divided by the number of shares of all stocks in the market.
- (c). depends on the allocation of money between the risk free asset and the market portfolio.
- (d). is $1/N$, where N is the number of risky assets in the market.

NCC 5060, Sample Exemption Exam, Name _____

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Sample Exemption Exam

Answer Key

1. (c)
2. (a)
3. (d)
4. (c)
5. (d)
6. (d)
7. (b)
8. (c)
9. (c)
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15. (a)
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25. (a)
26. (b)
27. (a)
28. (a)
29. (b)
30. (a)