***FINA 3000: FALL 2015***

***TEST 3: CAPITAL BUDGETING, WACC, AND SPECIAL TOPICS***

***NOVEMBER 18th, 2015***

***7 pm – 9 pm***

***INSTRUCTIONS:***

***1. Bubble in your LAST NAME, FIRST NAME, AND 810# on your scantron.***

***2. BUBBLE IN YOUR 5-DIGIT TEST CODE ON YOUR SCANTRON. THE FIRST TWO DIGITS ARE “0”.***

***3. For the true/false section, enter “A” if the statement is TRUE, and enter “B” if the statement is FALSE.***

***4. For the multiple choice section, select the answer that best answers the question. SHOW your work for multiple choice question. Tests can be randomly graded for work.***

***5. There are 49 questions on the test.***

***HONOR CODE STATEMENT:***

*I agree to abide by the University of Georgia Culture of Honesty.*

*Signed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*PRINTED NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

***SECTION I: TRUE/FALSE***

*Mark A if the statement is TRUE, or make B if the statement is FALSE.*

1. In the current event, WWE became easier to value after launching the WWE Network.

2. The main weakness of the DCF valuation model is that it assumes a long-term growth rate for free cash flows.

3. A negative FCF is always a cause for alarm for an established company.

4. Anheuser-Busch InBev acquiring SAB Miller is considered the largest transaction ever.

5. Free Cash Flow (FCF) represents the cash flow available for shareholders.

6. Suppose that a project has less systematic risk than the typical project for a firm. If the firm uses its firm-wide beta, there is a chance that the firm will reject a project that actually has a positive NPV.

7. Preferred stockholders do not have voting rights or ownership in the firm under normal operating conditions.

8. With Oprah buying equity in the firm, Weight Watchers is hoping to change the company business model to healthy living, rather than diet.

9. Dr. Pope feels that the new wedding loan concept is a great idea for couples to finance their celebrations.

10. Firms that have cyclical revenue will have a higher beta than firms with non-cyclical revenue (all else equal).

11. A firm has a cash flow operating leverage of 0.80. This means that a 1% increase in sales will result in 0.80% increase in cash flow.

12. Modigliani and Miller argue that in a world with taxes, default risk prevents firms from using exclusively debt.

13. The exchange rate between the Euro and the U.S. dollar changes from 1 Euro per $1.14 dollars, to 1 Euro to $1.28 dollars. This means that a U.S. citizen traveling to Europe will now have a cheaper vacation.

14. A challenge with multiples is that we assume that the comparable firm and the target firm are very similar.

15. The Federal Reserve has had a policy of lowering the risk-free rate over the past six years. For firms, this has translated to a lower weighted average cost of capital and greater opportunities to invest in projects.

16. In the WACC equation, we multiply the cost of debt by (1-T) because interest is tax deductible on the income statement.

17. To estimate the cost of debt in the WACC equation, the most common strategy is to use the average coupon rate on bonds issued by the company.

18. Sensitivity analysis examines change on NPV when we adjust the value of one input (or variable) at a time.

19. The optimal cycle length is the found when the value of quitting the project exceeds the value of continuing.

20. The debt ceiling represents the most debt the United States can issue without defaulting.

21. The proposed acquisition by Walgreens will likely be denied by the Federal Trade Commission due to anti-trust violations.

22. The weighted average cost of capital always decreases as the firm increases financial leverage.

23. The SEC voted recently to implement Title III of the JOBS Act. This means that crowdfunding businesses like KickStarter will now have to register with the SEC to legally operate.

24. Twitter has lost substantial value in their equity due to slow growth in their number of users.

25. McDonald’s recently announced a larger dividend in an effort to increase the share price.

***SECTION II: MULTIPLE CHOICE (5 points each, except where noted)***

***Use the following information for problems 26-27:***

An analyst is trying to find the enterprise value for Bloomington Beverage Company (BBC). The firm just posted a FCF for the last year of $60 million. The analyst believes that free cash flows will grow by 25% for each of the next two years. After the second year, the analyst projects a conservative long-term growth rate of 3% per year.

The firm has a capital structure of 40% debt and 60% equity. Currently, the yield to maturity on BBC debt is 6%, while common stock holders require a 9% return. The marginal tax rate for the firm is 35%.

26. What is the weighted average cost of capital for Bloomington Beverage?

|  |  |
| --- | --- |
| a. | 6.24% |
| b. | 6.96% |
| c. | 7.35% |
| d. | 7.50% |
| e. | 7.80% |

27. (4 points) What is the enterprise value for Bloomington Beverage? (in millions)

|  |  |
| --- | --- |
| a. | $2,031 |
| b. | $2,251 |
| c. | $2,283 |
| d. | $2,794 |
| e. | No correct answer within $100 of correct answer |

***Use the following information for problems 28-29:***

An analyst wants to estimate the equity value for Southeast Chicken Restaurants. To find the equity value, the analyst will use multiples with McDonald’s as a comparable firm. Below, the analyst has collected financial information for McDonald’s: (all values in millions)

|  |  |
| --- | --- |
| Market value of equity | $1,000 |
| Market value of notes payable | $100 |
| Market value of long-term debt | $300 |
| Market value of preferred stock | $60 |
| Cash on hand | $50 |
| EBITDA | $200 |

28. What is the Enterprise Value/EBITDA multiple for McDonald’s?

|  |  |
| --- | --- |
| a. | 6.04 |
| b. | 6.44 |
| c. | 6.55 |
| d. | 7.05 |
| e. | 8.55 |

29. (4 points) After discussions with the CFO for Southeast Chicken, the analyst was given the following condensed income statement: (all values in millions)

|  |  |
| --- | --- |
| ***Recent Income Statement:*** |  |
| Revenues | $775.00 |
| Cost of Goods | $450.00 |
| Selling and Administrative Expense | $100.00 |
| Depreciation and Amortization | $100.00 |
| EBIT | $125.00 |

Southeast Chicken has debt valued at $400.00 million and cash on hand at $50 million. The firm has 10 million shares outstanding. Using results from #28, what is the estimated value for a share of equity for Southeast Chicken? (assume that it is similar to McDonald’s)

|  |  |
| --- | --- |
| a. | $46.88 |
| b. | $109.90 |
| c. | $112.38 |
| d. | $123.63 |
| e. | No answer is within $5 of the correct answer |

30. A share of preferred stock is currently trading at $45.00. The stock pays a quarterly dividend of $1.00 per share. What is the annual return (expressed as an APR) if an investor buys at the current price?

|  |  |
| --- | --- |
| a. | 8.00% |
| b. | 8.24% |
| c. | 8.63% |
| d. | 8.89% |
| e. | 9.14% |

***Use the following information for problems 31-32:***

Kristoff’s Frozen Treats sells popsicles in the Northeast United States. The company CEO has decided to purchase a new freezer to store popsicles in the warehouse during the year. The purchase price of the industrial freezer is $40,000 and the firm will spend an additional $25,000 to have the freezer delivered and installed. The IRS places it in the 5-year MACRS class for depreciation purposes. The tax rate facing the firm is 35%.

31. What is the depreciation for the first year of owning the freezer unit?

|  |  |
| --- | --- |
| a. | $8,000 |
| b. | $10,000 |
| c. | $11,000 |
| d. | $12,000 |
| e. | $13,000 |

32. Kristoff plans on selling the freezer unit in five years. If the firm can sell the asset at that time for $8,000, what will be the Net Salvage Value at that time?

|  |  |
| --- | --- |
| a. | $4,550 |
| b. | $5,200 |
| c. | $6,006 |
| d. | $6,185 |
| e. | $6,510 |

33. A firm has estimated the following values for a potential project:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Income Statement Values: | | 0 | 1 | 2 | | 3 | | 4 | |
| Sales Revenue |  | | $100 | | $100 | | $100 | | $100 | |
| Expenses |  | | $40 | | $40 | | $40 | | $40 | |
| Depreciation |  | | $20 | | $20 | | $20 | | $20 | |
| EBIT |  | | $40 | | $40 | | $40 | | $40 | |
|  |  | |  | |  | |  | |  | |
| Balance Sheet Values: |  | |  | |  | |  | |  | |
| Current Assets | $10 | | $12 | | $12 | | $15 | | $15 | |
| Current Liabilities | $5 | | $6 | | $6 | | $8 | | $8 | |
|  |  | |  | |  | |  | |  | |
| Gross PPE | $25 | | $25 | | $25 | | $25 | | $25 | |

The tax rate facing the firm is 35%.

What is the project cash flow for year 1?

|  |  |
| --- | --- |
| a. | -$5 |
| b. | $43 |
| c. | $45 |
| d. | $46 |
| e. | $47 |

34. (4 points) What is the degree of operating leverage for the high efficiency machine if you expect to sell 50,000 units?

|  |  |  |
| --- | --- | --- |
| Expected Case: | High Efficiency | Low Efficiency |
| Unit price | $40 | $40 |
| Unit variable cost | $16 | $28 |
| Fixed Cost | $400,000 | $100,000 |

|  |  |
| --- | --- |
| a. | 1.20 |
| b. | 1.31 |
| c. | 1.38 |
| d. | 1.50 |
| e. | 1.71 |

35. Suppose a firm is considering a proposed project. The project requires an initial investment of $5 million and it has an economic life of four years. The project’s yearly cash flows will depend on market conditions. The firm is deciding whether to turn down the project, to proceed with it today, or to delay the project for one year. Currently, there is a 40% probability that the market will be good and a 60% probability that the market will be bad. If the decision is postponed for a year, the market’s condition will be known. Given the project’s risk, all cash flows are discounted at 12%.

If the market is good, cash flows will be $2.5 million per year. If the market is bad, cash flows will be $1.5 million per year. The firm will make the choice that maximizes NPV. Which answer describes the best approach for the firm?

|  |  |
| --- | --- |
| a. | Delay a year for an expected NPV of $0.93. |
| b. | Delay a year for an expected NPV of $1.03. |
| c. | Delay a year for an expected NPV of $1.24. |
| d. | Invest in the project for an expected NPV of $0.77. |
| e. | Invest in the project for an expected NPV of $0.89 |

***QUESTIONS 36 and 37 are LINKED!!!!***

36. Caterpillar (CAT) has debt valued at 20 billion on its balance sheet, while the market value of its common stock is roughly 40 billion. If the yield to maturity on the debt is 6.00%, and the cost of equity for the firm is 11.50%, find the WACC for CAT if the tax rate for the firm is 35%.

|  |  |
| --- | --- |
| a. | 5.28% |
| b. | 6.38% |
| c. | 8.37% |
| d. | 8.97% |
| e. | 9.19% |

37. (2 pts) Caterpillar (CAT) has a project with the following cash flows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| YEAR | 0 | 1 | 2 | 3 | 4 |
| Cash flow | -$40 | $13 | $13 | $13 | $13 |

What should Caterpillar do with this project?

|  |  |
| --- | --- |
| a. | Accept the project. |
| b. | Reject the project. |

38. Suppose that the Kia Plant in West Point, Georgia decides to replace a major assembly line on the plant floor. The current assembly line has a book value of $400,000, and the firm can sell it to another manufacturer for $180,000.

The new assembly line will cost Kia $2,000,000 to purchase, and there will be an additional $40,000 cost to deliver and install the asset. Finally, as part of the new assembly line, Kia will increase net working capital (NWC) by $50,000.

The marginal tax rate facing Kia is 35%. What is the cash flow from replacing the old assembly line? (Include all costs….)

|  |  |
| --- | --- |
| a. | -$1,793,000 |
| b. | -$1,807,000 |
| c. | -$1,819,000 |
| d. | -$1,833,000 |
| e. | -$1,987,000 |

***Use the following information to solve problems 39-42:***

An analyst following Dinozzo Security Corporation has just relayed the following information on the company:

|  |  |  |  |
| --- | --- | --- | --- |
| STOCK |  | DEBT |  |
| # of shares | 4 million | Face Value | $200 million |
| Price per share | $60 | Current trading value | 125 % of face |
| Shareholder equity | $100 million | Average maturity | 6 years |

Dinozzo bonds pay an annual coupon rate of 10%. The current risk free rate is 2%, while the market portfolio risk premium is 5.50%. The beta for Dinozzo Security is 1.20. The tax rate facing the firm is 40%. The firm is considering a project with an IRR of 8%.

39. What is the required return to hold Dinozzo stock?

|  |  |
| --- | --- |
| a. | 6.20% |
| b. | 6.90% |
| c. | 8.60% |
| d. | 9.15% |
| e. | 9.70% |

40. What is the yield to maturity for Dinozzo bonds?

|  |  |
| --- | --- |
| a. | 3.33% |
| b. | 4.79% |
| c. | 4.92% |
| d. | 5.06% |
| e. | 6.52% |

41. (4 points) What is the weighted average cost of capital for Dinozzo?

|  |  |
| --- | --- |
| a. | 5.23% |
| b. | 5.76% |
| c. | 6.30% |
| d. | 6.60% |
| e. | No answer is within 0.25% of correct answer |

42. (4 points) Should Dinozzo accept the project?

|  |  |
| --- | --- |
| a. | Accept the project since the WACC<= IRR |
| b. | Reject the project since the WACC <= IRR |
| c. | Accept the project since the WACC>= IRR |
| d. | Reject the project since the WACC >= IRR. |

***Use the following information for problems 43-45:***

Daily Enterprises is purchasing an $8 million machine. It will cost $100,000 to transport and install the machine. The machine has a depreciable life of five years using the straight-line depreciation and will have no salvage value. The machine will generate incremental revenues of $5.2 million per year along with incremental costs of $2.4 million per year. Daily’s marginal tax rate is 35%.

The cost of capital for the firm is 12%.

43. (4 points) What is the project cash flow at year 0?

|  |  |
| --- | --- |
| a. | -$5,265,000 |
| b. | -$8,035,000 |
| c. | -$8,065,000 |
| d. | -$8,100,000 |
| e. | -$8,150,000 |

44. (4 points) What is the project cash flow for years 1-5?

|  |  |
| --- | --- |
| a. | $2,257,000 |
| b. | $2,380,000 |
| c. | $2,387,000 |
| d. | $2,410,000 |
| e. | None of the above answers are within $2,000 of correct answer. |

45. (3 points) Suppose that Daily Enterprises will repeat this project every five years into the future. What is the equivalent annual annuity for this project?

|  |  |
| --- | --- |
| a. | $19,052 |
| b. | $84,052 |
| c. | $75,180 |
| d. | $139,981 |
| e. | None of the above answers are within $2,000 of correct answer. |

46. (4 points) A firm decides to expand its operations and use more square footage in their main office. Currently, they rent out 3000 square feet of space at a rate of $3,259.00 per month. The new expansion will use this space. The firm has a cost of capital of 9.00% APR. If the tax rate is 35.00% facing the firm, what is the opportunity cost of using this space if this expansion is permanent (i.e. forever)? (The rent for today has already been paid…)

|  |  |
| --- | --- |
| a. | $273,780 |
| b. | $282,447 |
| c. | $352,003 |
| d. | $353,058 |
| e. | None of the above are within $100 of correct answer. |

47. (4 points) You are the owner of the local record store, and you are considering opening a coffee shop in a vacant area in the back of the store. You estimate that it will cost you $50,000 to set up the store and that you will generate $12,000 in after-tax cash flows for the life of the store (which is expected to be 8 years.) The one concern you have is that you have limited parking; by opening the coffee shop you run the risk of not having enough parking for customers who shop at your record store. You estimate that the lost sales would amount to $5,500 per year and that your after-tax operating margin on sales at the record store is 45%. If your discount rate is 10%, what is the NPV of opening the coffee shop?

|  |  |
| --- | --- |
| a. | -$1,438 |
| b. | $548 |
| c. | $682 |
| d. | $815 |
| e. | $1,240 |

48. (4 points) Coca-Cola wants to build a bottling plant in Valencia, Spain. The bottling plant will run for 20 years and cost 80.00 million Euros to build. The cash flow in the first year is estimated to be 10.00 million Euros. Analysts expect the cash flows to grow at 5.00% per year, while Coca-Cola has a cost of capital for their European division of 9.00%. If we assume an average exchange rate of 1.43 $/Euro, what is the NPV of this project in millions of dollars?

|  |  |
| --- | --- |
| a. | $36.28 |
| b. | $48.77 |
| c. | $51.64 |
| d. | $59.78 |
| e. | $73.85 |

49. (EXTRA CREDIT) In class, we discussed exchange traded funds or ETFs. Who founded the ETF that Dr. Pope owns?

|  |  |
| --- | --- |
| a. | Mark Cuban |
| b. | Robert Herjavek |
| c. | Warren Buffett |
| d. | Jimmy Buffett |
| e. | None of the above are the correct answer. |