Some practice problems for FIN350

For the final, you can use ONE piece of “info sheet”. The info sheet must be handwritten and no larger than letter/A4 size (8.5 x 11 inches)

There will be 40 questions on the final exam. The exam will cover chapter 2 (4Qs), 6 & 7(5Qs), 8(6Qs), 9(5Qs), 10 (4Qs), 11 (5Qs), 12(4Qs) and 13 (7Qs), approximately. Please use this handout at your own risk. The questions on this handout may not resemble those on the final exam.

The following equations will be reprinted on the final exam.

To toggle between END and BEGIN model, press 2\(^{nd}\), BGN, 2\(^{nd}\), ENTER

\[
P = \frac{c_{pn}}{(1 + y)^1} + \frac{c_{pn}}{(1 + y)^2} + \ldots + \frac{(c_{pn} + par)}{(1 + y)^t}
\]

Current ratio = Current assets / Current liabilities  
FA turnover = Sales / Net fixed assets  
TA turnover = Sales / Total assets  
Inv. turnover = Sales / Inventories  
Days Sales Outstanding = Receivables / Average sales per day  
Debt ratio (D/A)= Total debt / Total assets  
Profit margin = Net income / Sales  
BEP = EBIT / Total assets  
ROA = Net income / Total assets  
ROE = Net income / Total common equity  
P/E = Price / Earnings per share  
M/B = Mkt price per share / Book value per share  
ROE = (NI/Sales) x (Sales/TA) x (TA/Equity)

\[
PV = \frac{FV_n}{(1 + i)^n}
\]

\[
iPER = \frac{iNOM}{m}
\]

\[
EFF\% = (1 + \frac{iNOM}{m})^m - 1
\]

WACC = wdrd(1-T) + wprp + wcrs  
rp = D / P  
rs = D1 / P0 + g  
CAPM: rs = rRF + (rM - rRF) \beta  
Rd (before tax): YTM  
Firm value = FCF1/(WACC-g) if free cash flows grow at a constant rate  
For bond: YTM = Current yield + Capital gains yield
1. Auto Loans R Them loans you $20,000 for four years to buy a car. The loan must be repaid in 48 equal monthly payments. The monthly interest rate on the loan is 1 percent. What is the monthly payment?
A) $526.68  
B) $542.79  
C) $561.93  
D) $500.96

2. What is the future value of the following set of cash flows 4 years from now? Assume an interest rate of 6.5%.

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>−$700</td>
</tr>
<tr>
<td>1</td>
<td>$300</td>
</tr>
<tr>
<td>2</td>
<td>$600</td>
</tr>
<tr>
<td>3</td>
<td>$400</td>
</tr>
<tr>
<td>4</td>
<td>$400</td>
</tr>
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A) $ 455.18  
B) $ 785.72  
C) $ 842.12  
D) $968.39  
E) $1,000.00

3. The First Bank offers personal loans at 7.5 percent compounded quarterly. The Second Bank offers similar loans at 7.25 percent compounded monthly. Which one of the following statements is correct concerning these two banks?
   a. The First Bank loan has an effective rate of 7.67 percent.
   b. The First Bank loan has an effective rate of 7.78 percent.
   c. The Second Bank loan has an effective rate of 7.50 percent.
   d. The Second Bank loan has an effective rate of 7.67 percent.
   e. The Second Bank loan has a higher effective rate than the First Bank loan.

4. What is the future value in 12 years of $400 payments received at the beginning of each year for the next 12 years? Assume an interest rate of 10%. (Do not forget to return to the END mode after solving this problem under the BGN mode.)
A) $7, 129.82  
B) $7, 704.32  
C) $16, 679.86  
D) $9, 247.74  
E) $9, 409.08
5. Assume that all interest rates in the economy decline from 10 percent to 9 percent. Which of the following bonds will have the largest percentage increase in price?
   a. A 10-year bond with a 10 percent coupon.
   b. An 8-year bond with a 9 percent coupon.
   c. A 10-year zero coupon bond.
   e. A 3-year bond with a 10 percent coupon.

6. Find the current yield and the capital gains yield for a 10-year, 9% annual coupon bond that sells for $900, and has a face value of $1,000.
   A) 10%, 0%
   A) 10%, 0.67%
   B) 10%, 0.76%
   C) 9%, 0.67%
   D) 9%, 0.76%

7. Which of the following statements is most correct?
   a. The market value of a bond will always approach its par value as its maturity date approaches, provided the issuer of the bond does not go bankrupt.
   b. If the Federal Reserve unexpectedly announces that it expects inflation to increase, then we would probably observe an immediate increase in bond prices.
   c. The total yield on a bond is derived from interest payments and changes in the price of the bond.
   d. Statements a and c are correct.
   e. All of the statements above are correct.

8. You determine that XYZ common stock will return 4 percent. XYZ has a beta of 0. The risk-free rate is 5 percent, and the market expected return is 15 percent. Which of the following is most likely to happen:
   A) You and other investors will buy up XYZ stock and its price will rise.
   B) You and other investors will sell XYZ stock and its return will fall.
   C) You and other investors will buy up XYZ stock and its return will rise.
   D) You and other investors will sell XYZ stock and its price will fall.

9. Tom Skinner has $45,000 invested in a stock with a beta of 0.8 and another $55,000 invested in a stock with a beta of 1.4. These are the only two investments in his portfolio. What is his portfolio’s beta?
   a. 0.93
   b. 0.98
   c. 1.03
   d. 1.08
   e. 1.13
10 Magee Company's stock has a beta of 1.20, the risk-free rate is 4.50%, and the market risk premium is 5.00%. What is Magee's required return?

a. 10.25%
b. 10.50%
c. 10.75%
d. 11.00%
e. 11.25%

11. Which of the following statements is CORRECT?

a. Beta is measured by the slope of the security market line
b. The slope of the security market line is equal to the market risk premium, \((r_M - r_{RF})\).
c. If a company’s beta doubles, then its required return will also double.
d. If a company’s beta is halved, then its required return will also be halved.

12. Assume that you plan to buy a share of XYZ stock today and to hold it for 2 years. Your expectations are that you will receive $1.16 as dividend at the end of Year 1, you will also receive a dividend of $9.25 at the end of Year 2. In addition, you expect to sell the stock for $150 at the end of Year 2. If your required rate of return is 16 percent, how much should you be willing to pay for this stock today?

a. $165.19
b. $73.29
c. $107.53
d. $119.35
e. $132.74

13. One year ago, Ryan purchased one share of MP stock for $18.6. Today, Ryan sold these shares for $29.18 a share. No dividend is paid. What is Ryan’s capital gains yield on this investment?

a. 56.88 percent
b. 42.22 percent
c. 47.78 percent
d. 36.26 percent
e. 60.48 percent
14. The market value of equity is $500 million and the total market value of the firm is $925 million. The cost of equity is 15%, the cost of debt is 10%, and the tax rate is 35%. What is the firm’s WACC?
   A) 11.09%
   B) 12.18%
   C) 13.78%
   D) 14.17%
   E) 15.64%

15. A project has the following cash flows. What is the payback period?

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flow</th>
<th>0</th>
<th>1</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>-$3,800</td>
<td>$2,700</td>
<td>$3,300</td>
<td>$1,400</td>
</tr>
</tbody>
</table>
   a.   1.88 years
   b.   1.70 years
   c.   1.33 years
   d.   1.84 years
   e.   1.59 years

16. Of the following methods used to evaluate investments, the overall best method is the:
   a. payback.
   b. accounting rate of return.
   c. internal rate of return.
   d. net present value.
   e. profitability index.

17. As the director of capital budgeting for Denver Corporation, you are evaluating two independent projects with the following net cash flows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Project X Cash Flow</th>
<th>Project Z Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>1</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>60</td>
</tr>
</tbody>
</table>

   If Denver’s cost of capital is 15 percent (assume this is also the appropriate discount rate for both projects), which project would you choose?
a. Neither project.
b. Project X, since it has the higher IRR.
c. Project Z, since it has the positive NPV.
d. Project X, since it has the higher NPV.
e. Project Z, since it has the positive IRR.

18. You bought some real estate six years ago for $25,000, and you are thinking of using this land for the construction of a new warehouse as part of a production expansion project. You include the $25,000 purchase cost of the land as an initial cost in the capital budgeting process. By doing so, you are making the mistake of ___ in the decision-making process.
A) including erosion costs
B) including opportunity costs
C) including sunk costs
D) including net working capital changes
E) including financing costs

19. A company is considering a new project. The company’s manager plans to calculate the project’s NPV by discounting the relevant cash flows (which include the initial up-front costs, the operating cash flows, and the terminal cash flows) at the company’s cost of capital (WACC). Which of the following factors should the manager include when estimating the relevant cash flows?

a. Any sunk costs associated with the project.
b. Any interest expenses associated with the project.
c. Any opportunity costs associated with the project.
d. Statements b and c are correct.
e. All of the statements above are correct.

20. A firm’s optimal capital structure:
a. is generally a mix of 40 percent debt and 60 percent equity.
b. exists when the debt-equity ratio is .50.
c. is the debt-equity ratio that exists at the point where the firm’s weighted aftertax cost of debt is minimized.
d. is the debt-equity ratio that results in the lowest possible weighted average cost of capital or maximize the stock price.
e. is found by locating the mix of debt and equity which causes the earnings per share to equal exactly $1.
21. Which of the following statements is likely to encourage a firm to increase its debt ratio in its capital structure?

- a. Its sales become less stable over time.
- b. Its corporate tax rate declines.
- c. The board of directors wants to mitigate (reduce) managers’ over spending behavior.
- d. Statements a and b are correct.

22. Lauer’s have decided to expand their retail shop by building on a vacant lot they own. The company will build a new building at an estimated cost of $1.8 million. The firm will spend another $400 thousand on the parking and access roads. The land was purchased ten years ago at a cost of $900 thousand. Today, that land is worth 2.8 million. What is the cost of this expansion project? (Note you should include opportunity cost)

- a. $2.2 million
- b. $5.0 million
- c. $3.1 million
- d. $5.9 million
- e. $4.6 million

23. From the information below, select the optimal capital structure for Minnow Entertainment Company.

- a. Debt = 40%; Equity = 60%; EPS = $2.95; Stock price = $26.50.
- b. Debt = 50%; Equity = 50%; EPS = $3.05; Stock price = $28.90.
- c. Debt = 60%; Equity = 40%; EPS = $3.18; Stock price = $31.20.
- d. Debt = 70%; Equity = 30%; EPS = $3.31; Stock price = $31.80.
- e. Debt = 80%; Equity = 20%; EPS = $3.42; Stock price = $30.40.

24. Project has an internal rate of return of 20 percent. Project Y has an internal rate of return of 15 percent. Both projects have a positive net present value. Which of the following statements is most correct?

- a. Project X must have a higher net present value than Project Y.
- b. If the two projects have the same WACC, Project X must have a higher net present value.
- c. Project X must have a shorter payback than Project Y.
- d. Statements b and c are correct.
- e. None of the statements above is correct.
25. M&M Proposition I without taxes, (this is case I as discussed in our lecture), states that:
   a. the cost of equity rises when financial leverage rises.
   b. the weighted average cost of capital is constant.
   c. firms should borrow to the point where the tax benefit from debt is equal to the cost of the increased probability of financial distress.
   d. it is completely irrelevant how a firm arranges its capital structure.
   e. financial risk is determined by the debt-equity ratio.

26. The liquidity premium is the portion of bond yield that represents compensation for the:
   a. difference between short-term and long-term tax rates.
   b. difference in the maturity term of a short-term versus a long-term bond.
   c. lack of the ability to sell the bond at its fair value in a timely manner.
   d. changes in interest rates and the resulting changes in bond prices.
   e. fluctuation in market prices throughout the trading day.

27. Which one of the following statements concerning financial leverage is correct?
   a. If a firm’s debt-equity ratio increases, the firm’s financial leverage decreases.
   b. Financial leverage affects a firm’s earnings per share but not the firm’s return on equity.
   c. Financial leverage refers to the use of common stock.
   d. Financial leverage magnifies both profits and losses.
   e. Increasing financial leverage will always increase the earnings per share.

28. The degree of financial leverage is defined as:
   a. \[
   \frac{\% \text{ change in EBIT}}{\% \text{ change in Variable Cost}}
   \]
   b. \[
   \frac{\% \text{ change in EBIT}}{\% \text{ change in Sales}}
   \]
   c. \[
   \frac{\% \text{ change in Sales}}{\% \text{ change in EBIT}}
   \]
   d. \[
   \% \text{ change in EBIT} \text{ \ \ \ \ \ \ \ % change in contribution margin}
   \]
   e. \[
   \% \text{ change in net income} \text{ \ \ \ \ \ % change in EBIT}
   \]
1. Auto Loans R Them loans you $20,000 for four years to buy a car. The loan must be repaid in 48 equal monthly payments. The monthly interest rate on the loan is 1 percent. What is the monthly payment?
   A) $526.68
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   A) $7,129.82
   B) $7,704.32
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   D) $9,247.74
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   F) including erosion costs
   G) including opportunity costs
   H) including sunk costs
   I) including net working capital changes
   J) including financing costs

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b. Debt = 50%; Equity = 50%; EPS = $3.05; Stock price = $28.90.
c. Debt = 60%; Equity = 40%; EPS = $3.18; Stock price = $31.20.
d. Debt = 70%; Equity = 30%; EPS = $3.31; Stock price = $31.80.
e. Debt = 80%; Equity = 20%; EPS = $3.42; Stock price = $30.40.

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   a. \(\frac{\text{% change in EBIT}}{\text{% change in Variable Cost}}\)
   b. \(\frac{\text{% change in EBIT}}{\text{% change in Sales}}\)
   c. \(\frac{\text{% change in Sales}}{\text{% change in EBIT}}\)
   d. \(\frac{\text{% change in EBIT}}{\text{% change in contribution margin}}\)
   e. \(\frac{\text{% change in net income}}{\text{% change in EBIT}}\)