

Finance 3155 - Quiz 1 (Chapters 1-4) – September 19th of the Fall 2010 Semester

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Student Number _____

Instructions: You are to answer all of the following questions. For those questions with multiple choice answers, circle the correct answer. Where calculations are involved in obtaining a solution, you are reminded that the award of **ANY** credit is dependent upon you supply the proper justification for the answer you select (Make my job easy, explain to me how you arrived at the answer you chose! ☺). Good Luck to each of you!!!!

_____ 1. Two key limitations of the proprietorship form of business involve potential difficulty in raising needed capital and the presence of unlimited personal liability for business debts.

- a. True
- b. False

_____ 2. If a firm's managers want to maximize stock price it is in their best interests to operate efficient, low-cost plants, develop new and safe products that consumers want, and maintain good relationships with customers, suppliers, creditors, and the communities in which they operate.

- a. True
- b. False

_____ 3. In a competitive marketplace "good ethics" is a wonderful idea but an impractical standard. There are simply too few benefits to be gained from maintaining high business ethics.

- a. True
- b. False

_____ 4. Which of the following mechanisms is not used by shareholders to get managers to act in shareholder's best interests?

- a. Threat of firing
- b. Managerial compensation.
- c. Golden parachute.
- d. Threat of takeover.
- e. Answers b and c above.

_____ 5. Which of the following is a reason why companies move into international operations?

- a. To take advantage of lower production costs in regions of inexpensive labor.
- b. To develop new markets for their finished products.
- c. To better serve their primary customers.
- d. Because important raw materials are located abroad.
- e. All of the above.

_____ 6. Treasury bills, which represent debt of the U.S. government, have maturities less than one year. As a result, in which type of financial market do outstanding, or already issued, Treasury bills trade?

- a. capital market
- b. primary market
- c. money market
- d. stock markets
- e. Treasury bills trade in more than one of the above markets.

_____ 7. Capital markets are markets for

- a. commercial paper.
- b. short-term debt securities.
- c. long-term debt securities.
- d. Treasury notes.
- e. none of the above.

_____ 8. Which of the following is *not* a considered financial intermediary?

- a. commercial bank
- b. savings and loan association
- c. pension fund

- d. investment bank
- e. All of the above are financial intermediaries.

_____ 9. Which of the following is not an advantage of going public?

- a. It allows a firm's founders to diversify their holdings.
- b. It increases the liquidity of the stock.
- c. It establishes a value for the firm.
- d. It makes it easier to raise new equity capital in the future.
- e. All of the above are advantages of going public.

_____ 10. Certificates representing ownership in stocks of foreign companies, which are held in a trust bank located in the country the stock is traded are called _____.

- a. Certificates of Ownership
- b. Foreign Stock Funds
- c. Mutual Funds
- d. American Depository Receipts
- e. Investment Bankers

_____ 11. Which of the following is usually cited as a *disadvantage* of issuing new common stock as a method of financing?

- a. Common stock does not have a maturity date, thus it is an open-end commitment of the firm's earnings.
- b. Since sale of common stock increases the number of owners and the amount of capital at risk, the firm's bond rating is usually negatively affected and its cost of debt rises.
- c. If the firm currently has more equity than its optimal capital structure dictates and it issues more equity, then the average cost of capital will most likely rise.
- d. Common stock is not an attractive option if the firm seeks to increase its reserve borrowing capacity.

_____ 12. Yesterday, Bicksler Corporation purchased (and received) raw materials on *credit* from its supplier. All else equal, if Bicksler's current ratio was 2.0 before the purchase, what effect did this transaction have on Bicksler's current ratio?

- a. increased
- b. decreased
- c. stayed the same
- d. There is not enough information to answer this question.
- e. None of the above is a correct answer.

_____ 13. Which of the following statements is correct?

- a. If Company A has a higher debt ratio than Company B, then we can be sure that A will have a lower times-interest-earned ratio than B.
- b. Suppose two companies have identical operations in terms of sales, cost of goods sold, interest rate on debt, and assets. However, Company A used more debt than Company B; that is, Company A has a higher debt ratio. Under these conditions, we would expect B's profit margin to be higher than A's.
- c. The ROE of any company which is earning positive profits and which has a positive net worth (or common equity) must exceed the company's ROA.
- d. Statements a, b, and c are all true.
- e. Statements a, b, and c are all false.

_____ 14. Alumbat Corporation has \$800,000 of debt outstanding, and it pays an interest rate of 10 percent annually on its bank loan. Alumbat's annual sales are \$3,200,000; its average tax rate is 40 percent; and its net profit margin on sales is 6 percent. If the company does not maintain a TIE ratio of at least 4 times, its bank will refuse to renew its loan, and bankruptcy will result. What is Alumbat's current TIE ratio?

- a. 2.4, b. 3.4, c. 3.6, d. 4.0, e. 5.0

_____ 15. Determine the increase or decrease in cash for Rinky Supply Company for last year, given the following information. (Assume no other changes occurred during the past year.)

Decrease in marketable securities	=	\$25
Increase in accounts receivables	=	\$50
Increase in notes payable	=	\$30
Decrease in accounts payable	=	\$20
Increase in accrued wages and taxes	=	\$15

Increase in inventories	=	\$35
Retained earnings	=	\$ 5

a. -\$50, b. +\$40, c. -\$30, d. +\$20, e. -\$10

____ 16. Selzer Inc. sells all its merchandise on credit. It has a profit margin of 4 percent, days sales outstanding equal to 60 days, receivables of \$150,000, total assets of \$3 million, and a debt ratio of 0.64. What is the firm's return on equity (ROE)?

a. 7.1%, b. 33.3%, c. 3.3%, d. 71.0%, e. 8.1%

____ 17. Harvey Supplies Inc. has a current ratio of 3.0, a quick ratio of 2.4, and an inventory turnover ratio of 6. Harvey's total assets are \$1 million and its debt ratio is 0.20. The firm has no long-term debt. What is Harvey's sales figure if the total cost of goods sold is 75% of sales?

a. \$960,000, b. \$720,000, c. \$1,620,000, d. \$120,000, e. \$540,000

____ 18. At an inflation rate of 9 percent, the purchasing power of \$1 would be cut in half in 8.04 years. How long to the nearest year would it take the purchasing power of \$1 to be cut in half if the inflation rate were only 4%?

a. 12 years, b. 15 years, c. 18 years, d. 20 years, e. 23 years

____ 19. Gomez Electronics needs to arrange financing for its expansion program. Bank A offers to lend Gomez the required funds on a loan where interest must be paid monthly, and the quoted rate is 8 percent. Bank B will charge 9 percent, with interest due at the end of the year. What is the difference in the effective annual rates charged by the two banks?

a. 0.25%, b. 0.50%, c. 0.70%, d. 1.00%, e. 1.25%

____ 20. Assume you are to receive a 20-year annuity with annual payments of \$50. The first payment will be received at the end of Year 1, and the last payment will be received at the end of Year 20. You will invest each payment in an account that pays 10 percent. What will be the value in your account at the end of Year 30?

a. \$6,354.81, b. \$7,427.83, c. \$7,922.33, d. \$8,591.00, e. \$6,752.46

____ 21. You just graduated, and you plan to work for 10 years and then to leave for the Australian "Outback" bush country. You figure you can save \$1,000 a year for the first 5 years and \$2,000 a year for the next 5 years. These savings cash flows will start one year from now. In addition, your family has just given you a \$5,000 graduation gift. If you put the gift now, and your future savings when they start, into an account which pays 8 percent compounded annually, what will your financial "stake" be when you leave for Australia 10 years from now?

a. \$21,432, b. \$28,393, c. \$16,651, d. \$31,148, e. \$20,000

____ 22. As the winning contestant in a television game show, you are considering the prizes to be awarded. You must indicate to the sponsor which of the following two choices you prefer, assuming you want to maximize your wealth. Assume it is now January 1, and there is no danger whatever that the sponsor won't pay off.

(1) \$1,000 now and another \$1,000 at the beginning of each of the 11 subsequent months during the remainder of the year, to be deposited in an account paying 12 percent simple annual rate, but compounded monthly (to be left on deposit for the year).

(2) \$12,750 at the end of the year.

Which one would you choose?

- Choice 1
- Choice 2
- Choice 1, if the payments were made at the end of the year.
- The choice would depend on how soon you need the money.
- Either one, since they have the same present value.

____ 23. Assume that your required rate of return is 12 percent and you are given the following stream of cash flows:

<u>Year</u>	<u>Cash Flow</u>
0	\$10,000
1	15,000
2	15,000
3	15,000
4	15,000
5	20,000

If payments are made at the end of each period, what is the present value of the cash flow stream?

a. \$66,909, b. \$57,323, c. \$61,815, d. \$52,345, e. \$62,029

____ 24. Steaks Galore needs to arrange financing for its expansion program. One bank offers to lend the required \$1,000,000 on a loan which requires interest to be paid at the end of each quarter. The quoted rate is 10 percent, and the principal must be repaid at the end of the year. A second lender offers 9 percent, daily compounding (365-day year), with interest and principal due at the end of the year. What is the difference in the effective annual rates (EFF%) charged by the two banks?

a. 0.31%, b. 0.53%, c. 0.75%, d. 0.96%, e. 1.25%

____ 25. You want to borrow \$1,000 from a friend for one year, and you propose to pay her \$1,120 at the end of the year. She agrees to lend you the \$1,000, but she wants you to pay her \$10 of interest at the end of each of the first 11 months plus \$1,010 at the end of the 12th month. How much higher is the effective annual rate under your friend's proposal than under your proposal?

a. 0.00%, b. 0.45%, c. 0.68%, d. 0.89%, e. 1.00%

____ 26. Suppose you put \$100 into a savings account today, the account pays a simple annual interest rate of 6 percent, but compounded semiannually, and you withdraw \$100 after 6 months. What would your ending balance be 20 years after the initial \$100 deposit was made?

a. \$226.20, b. \$115.35, c. \$62.91, d. \$9.50, e. \$3.00

____ 27. The Desai Company just borrowed \$1,000,000 for 3 years at a quoted rate of 8 percent, quarterly compounding. The loan is to be amortized in end-of-quarter payments over its 3-year life. How much interest (in dollars) will your company have to pay during the second quarter?

a. \$15,675.19, b. \$18,508.81, c. \$21,205.33, d. \$24,678.89, e. \$28,111.66

____ 28. Your employer has agreed to make 80 quarterly payments of \$400 each into a trust account to fund your early retirement. The first payment will be made 3 months from now. At the end of 20 years (80 payments), you will be paid 10 equal annual payments, with the first payment to be made at the beginning of Year 21 (or the end of Year 20). The funds will be invested at a simple rate of 8.0 percent, quarterly compounding, during both the accumulation and the distribution periods. How large will each of your 10 receipts be? (Hint: You must find the EAR and use it in one of your calculations.)

a. \$7,561, b. \$10,789, c. \$11,678, d. \$12,342, e. \$13,119

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Answer Section

TRUE/FALSE

1. ANS: T PTS: 1 DIF: Easy TOP: Proprietorship

2. ANS: T PTS: 1 DIF: Easy TOP: Social welfare and finance

3. ANS: F PTS: 1 DIF: Easy TOP: Business ethics

MULTIPLE CHOICE

4. ANS: C PTS: 1 DIF: Easy OBJ: TYPE: Conceptual
TOP: Managerial incentives

5. ANS: E PTS: 1 DIF: Easy OBJ: TYPE: Conceptual
TOP: International operations motivation

6. ANS: C PTS: 1 DIF: Easy OBJ: TYPE: Conceptual
TOP: Financial markets

7. ANS: C PTS: 1 DIF: Easy OBJ: TYPE: Conceptual
TOP: Financial markets

8. ANS: D PTS: 1 DIF: Medium OBJ: TYPE: Conceptual
TOP: Financial intermediaries

9. ANS: E PTS: 1 DIF: Easy OBJ: TYPE: Conceptual
TOP: Going public

10. ANS: D PTS: 1 DIF: Easy OBJ: TYPE: Conceptual
TOP: ADRs

11. ANS: C PTS: 1 DIF: Medium OBJ: TYPE: Conceptual
TOP: Common stock financing

12. ANS: B PTS: 1 DIF: Medium OBJ: TYPE: Conceptual
TOP: Current ratio

13. ANS: B PTS: 1 DIF: Tough OBJ: TYPE: Conceptual
TOP: ROE and debt ratios

14. ANS: E
TIE = EBIT/I, so find EBIT and I.
Interest = \$800,000 0.1 = \$80,000.
Net income = \$3,200,000 0.06 = \$192,000.
Taxable income = EBT = \$192,000/(1 - T) = \$192,000/0.6 = \$320,000.
EBIT = \$320,000 + \$80,000 = \$400,000.
TIE = \$400,000/\$80,000 = 5.0 times.

PTS: 1 DIF: Medium OBJ: TYPE: Problem
TOP: TIE ratio

15. ANS: C
Statement of cash flows:

Cash Flows from Operations

Retained earnings	\$ 5	
Additions (sources of cash):		
Increase in accrued wages and taxes	15	
Subtractions (uses of cash):		
Increase in accounts receivable	(50)	
Increase in inventories	(35)	
Decrease in accounts payable	(20)	
Net Cash Flows from Operations		<u>(\$85)</u>

- Cash Flows Associated with Financing Activities

Decrease in marketable securities	\$25	
Increase in notes payable	<u>30</u>	
Net Cash Flows from Financing		<u>55</u>
Net reduction in Cash		<u>(\$30)</u>

PTS: 1 DIF: Medium OBJ: TYPE: Problem
TOP: Change in cash flows

16. ANS: C
(Sales per day)(DSO) = A/R
(Sales/360)(60) = \$150,000
Sales = \$900,000.

Profit margin = Net profit after tax/Sales.
Net profit = 0.4(\$900,000) = \$36,000.
Debt ratio = 0.64 = Total debt/\$3,000,000.
Total debt = \$1,920,000.
Total equity = \$3,000,000 - \$1,920,000 = \$1,080,000.
ROE = \$36,000/\$1,080,000 = 3.3%.

PTS: 1 DIF: Medium OBJ: TYPE: Problem
TOP: ROE

17. ANS: A
Current liabilities: (0.2)(\$1,000,000) = \$200,000.

Current assets: $CA/\$200,000 = 3.0$; $CA = \$600,000$.
 Inventory: $(\$600,000 - I)/\$200,000 = 2.4$; $I = \$120,000$.
 Sales: $(0.75)S/\$120,000 = 6$; $S = \$720,000/0.75 = \$960,000$.

PTS: 1 DIF: Medium OBJ: TYPE: Problem
 TOP: Sales volume

18. ANS: C

Cash flow time line:



Tabular solution:

$$0.5 = \$1 (PVIF_{4\%, n})$$

$$PVIF_{4\%, n} = 0.5$$

$$PVIF_{4\%, 18} = 0.4936; PVIF_{4\%, 17} = 0.5134$$

n 18 years.

Although a financial calculator or interpolation might be used to solve precisely, Response c is clearly the closest and best answer of those given.

Financial calculator solution:

Inputs: $I = 4$; $PV = 1$; $PV = 0.50$.

Output: $N = 17.67 = 18$ years.

PTS: 1 DIF: Easy OBJ: TYPE: Problem
 TOP: Effect of inflation

19. ANS: C

Bank A: 8%, monthly



Bank B: 9%, interest due at end of year

$EAR_B = 9\%$.

$$9.00\% - 8.30\% = 0.70\%$$

PTS: 1 DIF: Easy OBJ: TYPE: Problem
 TOP: Effective annual rate

20. ANS: B

Cash flow time line:



Tabular solution:

$$FV_{\text{Year } 20} = \$50 (FVIFA_{10\%, 20}) = \$50 (57.275) = \$2,863.75.$$

$$FV_{\text{Year } 30} = \$2,863 (FVIFA_{10\%, 10}) = \$2,863.75 (2.5937) = \$7,427.71.$$

Financial calculator solution:

Calculate FV at Year 20, then take that lump sum forward 10 years to Year 30 at 10%.

Inputs: $N = 20$; $I = 10$; $PMT = 50$.

Output_{Year 20}: $FV = \$2,863.75$.

At Year 30

Inputs: $N = 10$; $I = 10$; $PV = 2,863.75$.

Output_{Year 30}: $FV = \$7,427.83$.

PTS: 1 DIF: Medium OBJ: TYPE: Problem

TOP: FV of an annuity

21. ANS: D

Cash flow time line:



Tabular solution:

$$\begin{aligned} \text{FV} &= (\text{FVIFA}_{8\%, 10}) + \$1,000 (\text{FVIFA}_{8\%, 5}) + \$5,000 (\text{FVIF}_{8\%, 10}) \\ &= \$1,000 (14.487) + \$1,000 (5.866) + \$5,000 (.1589) \\ &= \$14,487 + \$5,866 + \$10,794.50 = \$31,147.50 \quad \$31,148 \end{aligned}$$

Financial calculator solution:

Solution using NFV (Note: Some calculators do not have net future value function. Cash flows can be grouped and carried forward or PV can be used; see alternative solution below.)

Inputs: $CF_0 = 5,000$; $CF_1 = 1,000$; $N_j = 5$; $CF_2 = 2,000$; $N_j = 5$; $I = 8$

Output: $\text{NFV} = \$31,147.79 \quad \$31,148$

Alternative solution: calculate PV of the cash flows, then bring them forward to FV using the interest rate.

Inputs: $CF_0 = 5,000$; $CF_1 = 1,000$; $N_j = 5$; $CF_2 = 2,000$; $N_j = 5$; $I = 8$

Output: $\text{PV} = \$14,427.45$

Inputs: $N = 10$; $I = 8$; $\text{PV} = 14,427.45$

Output: $\text{FV} = \$31,147.79 \quad \$31,148$

PTS: 1 DIF: Medium OBJ: TYPE: Problem

TOP: FV of an uneven CF stream

22. ANS: A

Cash flow time line:



Tabular solution:

$$\begin{aligned} \text{PV}_{\text{Choice 1}} &= \$1,000 (\text{PVIFA}_{1\%, 11} + 1.0) = \$1,000 (11.3676) = \$11,367.60 \\ \text{PV}_{\text{Choice 2}} &= \$12,750 (\text{PVIF}_{1\%, 12}) = \$12,750 (0.8874) = \$11,314.35 \end{aligned}$$

Financial calculator solution:

Choice 1

BEGIN mode, Inputs $N = 12$; $I = 1$; $\text{PMT} = 1,000$.

Output: $\text{PV} = \$11,367.63$

Choice 2

END mode, Inputs: $N = 12$; $I = 1$; $\text{FV} = 12,750$.

Output: $\text{PV} = \$11,314.98$.

PTS: 1 DIF: Medium OBJ: TYPE: Problem

TOP: PV of an annuity

23. ANS: A

Cash flow time line:



Tabular solution:

$$\text{PV} = \$10,000 + \$15,000 (\text{PVIFA}_{12\%, 4}) + \$20,000 (\text{PVIF}_{12\%, 5})$$

$$= \$10,000 + \$15,000 (3.0373) + \$20,000 (0.5674)$$

$$= \$10,000 + \$45,559.50 + \$11,348 = \$66,907.50.$$

Financial calculator solution:

Using cash flows

Inputs: $CF_0 = 10,000$; $CF_1 = 15,000$; $N_j = 4$ times; $CF_2 = 20,000$; $I = 12$.

Output: NPV = \$66,908.77 \$66,909.

Note: Tabular solution differs from calculator solution due to interest factor rounding.

PTS: 1 DIF: Medium OBJ: TYPE: Problem
TOP: PV of an uneven CF stream

24. ANS: D



Difference = 10.38% 9.42% = 0.96%

Alternatively, with a financial calculator, for the quarterly loan enter P/YR = 4, NOM% = 10, and press EFF% to get EAR = 10.38%.

For the daily loan, enter P/YR = 365, NOM = 9%, and press EFF% to get EAR = 9.42%.

PTS: 1 DIF: Medium OBJ: TYPE: Problem
TOP: Effective annual rate

25. ANS: C

Your proposal:

$EAR_1 = \$120/\$1,000$

$EAR_1 = 12\%$

Your friend's proposal:

Interest is being paid each month ($\$10/\$1,000 = 1\%$ per month), so it compounds, and the EAR is higher than $r_{SIMPLE} = 12\%$:



Difference = 12.68% 12.00% = 0.68%

You could also visualize your friend's proposal in a cash flow time line format:



Insert those cash flows in the cash flow register of a calculator and solve for IRR. The answer is 1%, but this is a monthly rate. The simple rate is $12 (1\%) = 12\%$, which converts to an ER of 12.68% as follows:

Input into a financial calculator the following:

P/YR = 12, NOM% = 12, and solve for EFF% = 12.68%

PTS: 1 DIF: Easy OBJ: TYPE: Financial Calculator
TOP: Effective annual rate

26. ANS: D

Cash flow time line:



Tabular/Numerical solution:

Solve for amount on deposit at the end of 6 months.

Step 1: $FV = \$100 (FVIF_{3\%, 1})$ $\$100 = \3.00
 $FV = \$100 (1 + 0.06/2)$ $\$100 = \3.00

Step 2: *Compound the \$3.00 for 39 periods at 3%*
 $FV = \$3.00 (FVIF_{3\%, 39}) = \9.50

Since table does not show 39 periods, use numerical/calculator exponent method.

$$FV = \$3.00 (1 + 0.06/2)^{39} = \$9.50$$

Financial calculator solution: (Step 2 only)

Inputs: N = 39; I = 3; PV = 3.00.

Output: FV = \$9.50

PTS: 1 DIF: Medium OBJ: TYPE: Financial Calculator

TOP: FV of a sum

27. ANS: B

Compute the quarterly payment:



<u>Beg Bal</u>	<u>PMT</u>	<u>INT</u>	<u>Principal</u>	<u>End Bal</u>
\$1,000,000.00	\$94,559.60	\$20,000.00	\$74,559.60	\$925,440.40
925,440.40	94,559.60	18,508.81	76,050.79	849,389.61

Interest in the second quarter (payment) is \$18,508.81.

PTS: 1 DIF: Medium OBJ: TYPE: Financial Calculator

TOP: Amortization

28. ANS: B

Cash flow time line:



PMT = ?

Find the FV at t = 80 of \$400 quarterly payments:

N = 80; I = 2; PV = 0; and PMT = 400.

Solve for FV = \$77,508.78

Find the EAR of 8%, compounded quarterly, so you can determine the value of each of the receipts.



Now, determine the value of the receipts, remembering that this is an annuity due.

With a financial calculator, input the following:

N = 10; I = 8.2432; PV = 77,508.78; and FV = 0.

Solve for PMT = \$10,788.78 \$10,789

PTS: 1 DIF: Tough OBJ: TYPE: Financial Calculator

TOP: PMT and quarterly compounding