

Name \_\_\_\_\_

Nickname for Grades \_\_\_\_\_

**Finance 340 – Managerial Finance I**  
**Spring 2008**  
Midterm Exam #1 – Version A

*Dr. Stanley D. Longhofer*  
*TTh 11:00-12:15*

DO NOT OPEN THIS EXAM UNTIL I GIVE YOU PERMISSION TO BEGIN!

Midterm exam rules:

1. You have 1 hour and 15 minutes to take the exam.
2. You must turn in both this exam booklet (with your name on it) and your bubble sheet in order to receive a grade on the exam. Also make sure you include your MyWSU ID on the bubble sheet.
3. YOU HAVE FORM A; enter this at the bottom of your bubble sheet.
4. Use a pencil to fill in the bubble sheets; the computer scanner cannot read ink pens.
5. You may use only the formula sheet provided with this exam. Please make sure all other notes, texts, etc. are put away and completely out of reach. Anyone caught referencing more than three pages of notes on the exam or referring to other, unapproved materials will receive an automatic zero on the exam.
6. You may use a financial calculator. Cell phones, personal digital assistants, or similar electronic devices are NOT permitted, however. Use of unauthorized computer devices will also result in an automatic zero on the exam. Please make sure your cell phones are turned off. If you need me to monitor your cell phone for emergency purposes, bring it to me before class begins.
7. I've tried to eliminate any ambiguity about how to interpret the questions on the exam. IF YOU HAVE ANY QUESTIONS, PLEASE ASK. If, after any clarification I provide, you make any assumptions not explicitly stated in the questions, make sure you write them down so I can see what you are doing.
8. If you choose option E for any question, be sure to write down your calculator keystrokes next to the question on the exam booklet (where appropriate).
9. If a question does not specify otherwise, assume that the compounding frequency is the same as the number of payments per year. Assume annual compounding when payments and compounding are not specified at all.

DO NOT OPEN YOUR EXAM BOOKLET UNTIL I HAVE GIVEN YOU PERMISSION TO BEGIN!

- \_\_\_\_\_ 1. Suppose you deposit \$2,500 today into an account that will earn 4.5 percent interest, compounded annually. How much will your account be worth at the end of 20 years?
- A. \$6,029.29
  - B. \$4,750.00
  - C. \$1,036.61
  - D. \$6,138.67
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 2. Suppose instead that the account in the previous question earns 4.5 percent interest, compounded quarterly. How much will the account be worth at the end of 20 years in this case?
- A. \$6,029.29
  - B. \$3126.88
  - C. \$6,118.19
  - D. \$1,021.54
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 3. A bank recently loaned you \$15,000 to buy a car. The loan is for five years (60 months) and is fully amortized. The nominal rate on the loan is 12 percent and payments are made at the end of each month. What will be the remaining balance on the loan after you make the 30<sup>th</sup> payment?
- A. \$8,611.17
  - B. \$7,500.00
  - C. \$20,217.73
  - D. \$4,990.00
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 4. An investment pays you 9 percent interest compounded semiannually. A second investment, of equal risk, pays interest compounded quarterly. What nominal rate of interest would you have to receive on the second investment in order to make you indifferent between the two investments?
- A. 9.00%
  - B. 9.20%
  - C. 8.90%
  - D. 9.31%
  - E. None of the above; the correct answer is \_\_\_\_\_.

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Use the following information to answer the next 8 questions:

The balance sheet and income statement shown below are for Byrd Inc. (all figures in millions of dollars). Note that the firm has no amortization charges, it does not lease any assets, and none of its debt must be retired during the next 5 years (notes payable will be rolled over).

**BALANCE SHEET**

Cash	\$ 140.0	Accounts payable	\$ 800.0
Accts. receivable	880.0	Notes payable	600.0
Inventories	1,320.0	Accruals	400.0
Total current assets	<u>\$2,340.0</u>	Total current liabilities	<u>\$1,800.0</u>
		Long-term bonds	1,000.0
		Total debt	<u>\$2,800.0</u>
		Common stock (50,000 shares)	200.0
Net plant & equip.	1,660.0	Retained earnings	1,000.0
Total assets	<u><u>\$4,000.0</u></u>	Total common equity	<u>\$1,200.0</u>
		Total liabilities & equity	<u><u>\$4,000.0</u></u>

**INCOME STATEMENT**

Net sales	\$ 6,000.0
Operating costs	5,599.8
Depreciation	100.2
EBIT	<u>\$ 300.0</u>
Less: Interest	96.0
EBT	\$ 204.0
Less: Taxes	81.6
Net income	<u><u>\$ 122.4</u></u>

**OTHER DATA**

Shares outstanding (millions)	60.00
Common dividends	\$42.8
Interest rate on N/P and long-term bonds	6.0%
Federal plus state income tax rate	40%
Year-end stock price	\$30.60

\_\_\_\_\_ 5. What is Byrd's current ratio?

- A. 1.10
- B. 1.20
- C. 1.30
- D. 1.40
- E. 1.50

\_\_\_\_\_ 6. What is Byrd's ROA?

- A. 2.90%
- B. 3.06%
- C. 3.24%
- D. 3.41%
- E. 3.65%

- \_\_\_\_\_ 7. What is Byrd's ROE?
- A. 9.45%
  - B. 9.63%
  - C. 9.84%
  - D. 10.20%
  - E. 10.43%
- \_\_\_\_\_ 8. What is Byrd's EBITDA coverage?
- A. 3.51
  - B. 3.69
  - C. 3.88
  - D. 4.04
  - E. 4.17
- \_\_\_\_\_ 9. What is Byrd's days sales outstanding (assuming a 360-day year)?
- A. 51.30 days
  - B. 52.80 days
  - C. 53.90 days
  - D. 54.80 days
  - E. 55.50 days
- \_\_\_\_\_ 10. What is Byrd's cash flow per share?
- A. \$3.71
  - B. \$3.86
  - C. \$4.01
  - D. \$4.16
  - E. \$4.31
- \_\_\_\_\_ 11. What is Byrd's P/E ratio?
- A. 10.0
  - B. 12.5
  - C. 15.0
  - D. 17.5
  - E. 20.0
- \_\_\_\_\_ 12. What is Byrd's market-to-book ratio?
- A. 1.38
  - B. 1.53
  - C. 1.68
  - D. 1.83
  - E. 1.98

- \_\_\_\_\_ 13. Bill plans to deposit \$200 into a bank account at the end of every month. The bank account has a nominal interest rate of 8 percent and interest is compounded monthly. How much will Bill have in the account at the end of 2½ years (30 months)?
- A. \$6,861.89
  - B. \$6,617.77
  - C. \$6,364.75
  - D. \$22,656.64
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 14. Walter wants to save \$1,200 to buy a new computer. If he deposits \$50 at the end of each month into an account paying 5 percent interest (compounded monthly), how long will it take him to save the money he needs?
- A. 22.9 months
  - B. 25.3 months
  - C. 24.0 months
  - D. He will never be able to save \$1,200 at this rate of saving.
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 15. If Walter wants to buy his computer nine months from now, how large will his monthly deposits need to be?
- A. \$133.33
  - B. \$136.13
  - C. \$131.13
  - D. He will not be able to save \$1,200 in nine months.
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 16. You can buy a perpetuity that pays \$1,000 annually, and your required rate of return on this investment is 15 percent. What is this investment worth today?
- A. \$15,000.00
  - B. \$6,666.67
  - C. \$66.67
  - D. \$5,018.77
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 17. At an inflation rate of 9 percent, the purchasing power of \$1 would be cut in half in just over 8 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 percent?
- A. 8 years
  - B. 4 years
  - C. 18 years
  - D. 20 years
  - E. None of the above; the correct answer is \_\_\_\_\_.

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Use the following information to answer the next 3 questions:

SEBRING CORPORATION: INCOME STATEMENTS FOR YEAR ENDING DECEMBER 31  
(MILLIONS OF DOLLARS)

	2005	2004
Sales	\$3,600.0	\$3,000.0
Operating costs (excluding depreciation and amortization)	3,060.0	2,550.0
EBITDA	\$ 540.0	\$ 450.0
Depreciation and amortization	90.0	75.0
Earnings before interest and taxes	\$ 450.0	\$ 375.0
Interest	65.0	60.0
Earnings before taxes	\$ 385.0	\$ 315.0
Taxes (40%)	154.0	126.0
Net income available to common stockholders	\$ 231.0	\$ 189.0
Common dividends	\$ 181.5	\$ 13.2

SEBRING CORPORATION: BALANCE SHEETS FOR YEAR ENDING DECEMBER 31  
(MILLIONS OF DOLLARS)

	2005	2004
Assets:		
Cash and marketable securities	\$ 36.0	\$ 30.0
Accounts receivable	540.0	450.0
Inventories	540.0	600.0
Total current assets	\$1,116.0	\$1,080.0
Net plant and equipment	900.0	750.0
Total assets	\$2,016.0	\$1,830.0
Liabilities and equity:		
Accounts payable	\$ 324.0	\$ 270.0
Notes payable	201.0	155.0
Accruals	216.0	180.0
Total current liabilities	\$ 741.0	\$ 605.0
Long-term bonds	450.0	450.0
Total debt	\$1,191.0	\$1,055.0
Common stock (50 million shares)	150.0	150.0
Retained earnings	675.0	625.0
Total common equity	\$ 825.0	\$ 775.0
Total liabilities and equity	\$2,016.0	\$1,830.0

\_\_\_\_\_ 18. What is Sebring's net operating profit after taxes (NOPAT) for 2005?

- A. \$100 million
- B. \$150 million
- C. \$225 million
- D. \$270 million
- E. \$375 million

- \_\_\_\_\_ 19. What is Sebring's net operating working capital for 2005?
- A. \$540 million
  - B. \$576 million
  - C. \$750 million
  - D. \$985 million
  - E. \$1,116 million
- \_\_\_\_\_ 20. What is Sebring's free cash flow for 2005?
- A. \$85 million
  - B. \$146 million
  - C. \$174 million
  - D. \$255 million
  - E. \$366 million
- \_\_\_\_\_ 21. Bank A offers to lend you \$10,000 at a nominal rate of 6% with interest paid monthly. Bank B offers to lend you the \$10,000, but it will charge 7% with interest paid at the end of the year. What is the difference in the effective annual rates charged by the two banks?
- A. 1.00%
  - B. 1.23%
  - C. 1.06%
  - D. 0.83%
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 22. Sylvester is considering an investment that is expected to pay \$550 per month for the next 15 years. If his required rate of return is 8.5 percent, how much is this investment worth to him today?
- A. \$55,852.33
  - B. \$198,982.49
  - C. \$4,567.33
  - D. \$54,807.96
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 23. Herman is considering an investment that is expected to pay \$16,000 per year for the next four years and will be worth \$40,000 at the end of the 4<sup>th</sup> year. If his discount rate is 17 percent, what is the most he should be willing to pay for this investment?
- A. \$62,136.21
  - B. \$104,000.00
  - C. \$65,237.76
  - D. There is not enough information to answer this question.
  - E. None of the above; the correct answer is \_\_\_\_\_.

- \_\_\_\_\_ 24. Clarence is trying to save for retirement. He would like to have enough saved to provide him with \$95,000 in income at the BEGINNING of each year for 30 years. If his investments during retirement will earn 9 percent annually, how much must he have in his retirement account to accomplish his goal?
- A. \$1,063,837
  - B. \$975,997
  - C. \$12,949,216
  - D. \$14,114,646
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 25. Clarence has 25 years until he retires and currently has nothing saved. If he makes contributions to his retirement account at the END of each year (which still earns 9 percent annual interest), how large must these contributions be to grow to the sum you calculated in the last question?
- A. \$10,571.44
  - B. \$11,522.87
  - C. \$12,559.93
  - D. \$108,305.26
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 26. Consider an investment that costs \$3,000 and will pay you \$5,000 at the end of 3 years. Assuming annual compounding, what rate of return will you earn on this investment?
- A. 18.56%
  - B. 15.66%
  - C. 54.26%
  - D. There is not enough information to answer this question.
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 27. Suppose you deposit \$500 into a bank account at the end of each year for 3 years, and then make annual deposits of \$400 for the following 6 years. If your account earns 5 percent interest compounded annually, how much will be in your account at the end of the 9<sup>th</sup> year?
- A. \$3,115.45
  - B. \$4,833.09
  - C. \$1,576.25
  - D. \$2,720.77
  - E. None of the above; the correct answer is \_\_\_\_\_.

- \_\_\_\_\_ 28. If a 5-year ordinary annuity has a present value of \$1,000, and if the interest rate is 10 percent, what is the amount of each annuity payment?
- A. \$1,610.51
  - B. \$263.80
  - C. \$239.82
  - D. \$200.00
  - E. None of the above; the correct answer is \_\_\_\_\_.

- \_\_\_\_\_ 29. What is the present value of the following cash flows if the appropriate discount rate is 14 percent?

Year	\$
1	2,500
2	2,500
3	2,500
4	1,500
5	1,500

- A. \$7,471.25
  - B. \$3,347.18
  - C. \$10,500.00
  - D. \$4,669.29
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 30. Suppose you deposited \$5,000 in a bank account that pays 6 percent with daily compounding and a 360-day year. How much could you withdraw after 7 months, assuming each month has 30 days?
- A. \$5,854.13
  - B. \$5,324.89
  - C. \$5,011.87
  - D. \$5,178.08
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 31. Joan would like to save \$65,000 to buy a yacht. She will make monthly deposits into a mutual fund that is expected to earn 8 percent, compounded annually. How large of payments must she make at the end of each month to be able to buy her yacht in 5 years (60 months)?
- A. \$884.63
  - B. \$891.09
  - C. \$1,309.30
  - D. \$923.31
  - E. None of the above; the correct answer is \_\_\_\_\_.

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- \_\_\_\_\_ 32. Suppose you borrow \$4,500 over 10 years at 9 percent interest, compounded annually. How large of annual payments will be required to fully repay this loan in 10 years?
- A. \$701.19
  - B. \$643.29
  - C. \$296.19
  - D. \$450.00
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 33. How much interest will be paid on this loan during the 3<sup>rd</sup> year?
- A. \$405.00
  - B. \$351.90
  - C. \$349.29
  - D. \$324.00
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 34. What rate of return would you earn if you paid \$1,500 for a perpetuity that returns \$105 per year?
- A. 6.01%
  - B. 7.00%
  - C. 14.28%
  - D. 10.00%
  - E. None of the above; the correct answer is \_\_\_\_\_.
- \_\_\_\_\_ 35. In the space below, draw a time line for an investment that will cost \$800 and will pay you \$100 at the end of the first 2 years and \$400 at the end of the following 3 years, with a 12 percent discount rate.