

Instructions:

- 1) The part of the exam is closed book and closed notes. No scrap paper is allowed; use the back of the exam if necessary.
- 2) True/False questions are worth 2 points. Multiple-choice questions are worth 3 points. Short answer/Fill in the Blanks questions usually take less than three sentences and are worth 4 points.

1. A financial manager of a corporation is considering different operating strategies for the coming year. From a financial management standpoint, which one of the following would be her optimal strategy?

- | | |
|--|--|
| a. reducing the overall risk level of the firm | b. maximizing the current value of the stock |
| c. maximizing current year profits | d. maximizing cash flows |
| e. minimizing the cost of debt | |

2. (2 points each, all or none on grading) Real Options – fill in the blanks. The following real options are from my tough economic times series of real options. If you need to describe the option more fully, write your description near the question. For the record, the type of option is either call or put. The underlying asset refers to the item that, upon a change in value, will affect the decision to exercise or not exercise the option. Write additional information if you feel it is needed to explain your answer.

a. The Federal Deposit Insurance Corporation insures deposits, up to \$250,000 in banks. There have been four banks in Carroll County fail in the past year. No depositor has lost any money and no depositor has had to wait more than one week to get their money from a failed bank. However without insurance, the average depositor would have lost about 40% of their money and would have waited about one year. Describe the depositor's real option.

Type of option _____ Who is long _____ Who is short _____ Underlying Asset _____

Exercise Price _____

b. The number of people applying for Social Security at age 62 instead of waiting until age 65 is up by 25%. A person getting Social Security at age 62 draws about 30% less money than if one waits until age 65. The government is obligated to pay Social Security to anyone who is over 62 and has worked for at least 10 years in their lifetime.

Type of option _____ Who is long _____ Who is short _____ Underlying Asset _____

Exercise Price _____

c. In Florida, there is a minimum mandatory prison sentence of 5 years for anyone using a gun in a robbery. Because of prison overcrowding, almost no one gets more than the minimum sentence. Danny, a Florida resident, was laid off from work after 30 years at age 59. Danny is now unemployed, hungry, has no insurance, and has lost his house to foreclosure. Danny finds a gun lying outside a convenience store.

Type of option _____ Who is long _____ Who is short _____ Underlying Asset _____

Exercise Price _____

d. Same scenario as part B, with one extra fact. Robbing a Bank with a gun is a Federal (United States) crime that almost always produces a three-year sentence. Robbing a convenience store is a Florida state crime. Federal prisons are of higher quality and nicer locations than Florida state prisons. Danny must decide between robbing a convenience store or a Bank.

Type of option _____ Who is long _____ Who is short _____ Underlying Asset _____

Exercise Price _____

e. A famous football coach, Bobby Bowden, did not have his contract renewed last year by Florida State University and was forced into retirement. Instead of receiving a \$2.5 million dollar salary next year, Bobby Bowden will receive an immediate severance payment of \$1 million.

Type of option _____ Who is long _____ Who is short _____ Underlying Asset _____

Exercise Price _____

3. Two investment opportunities have the same total cash flows. This means that with a discount rate of 0%, their cash flows have the same sum. Choose the combination from the following three aspects of capital budgeting that will give the highest Internal Rate of Return (hint, change each of the aspects one at a time, assume the projects are identical except for this change). CHOOSE THE BEST ANSWER.

Timing of Cash inflows	Depreciation (to zero salvage value)	Cost of Financing
1. Most received early	4. straight line	7. high cost
2. Paid evenly each year	5. MACRS	8. low cost
3. Most received late in project	6. does not matter	9. does not matter
a. 2, 5, 9.	b. 1, 5, 8	c. 1, 5, 9.
	d. 3, 6, 9.	e. 3, 4, 7.
		f. 2, 5, 8.

4. Suppose that inflation unexpectedly increases. What would you expect to happen to the value of a firm's planned capital budgeting projects?

5. You are advising a friend who is attempting to decide whether or not to drop one of the required courses in which they are currently enrolled. The friend is certain they will fail the course. If they drop the course, they will receive a tuition refund of half of the initial tuition. Which of the following statements made by your friend are consistent with capital budgeting principles?

- I. Remaining in the class incurs opportunity cost because they cannot work as many hours at their part-time job.
- II. The tuition refund is irrelevant, as the initial tuition was paid at the beginning of the semester.
- III. You must retake the course in a later semester.

a. I only b. I and II only c. I and III only d. II and III only e. I, II, and III

6. About six months before an option expires, you observe a stock price of \$ 55, an exercise price of \$50, and an options prices of \$8.50 and \$3. If investors are rational, the lower priced option must be:

- a. an in-the-money call.
- b. an in-the-money put.
- c. an at-the-money call.
- d. an at-the-money put.
- e. an out-of the money call.
- f. an out of the money put.

7. (3 points) Strategic NPV = _____ + _____

+ _____ + _____ (note you may not need all of the blanks)

8. Soft capital rationing refers to the rationing imposed externally by limited funds for borrowing from outside sources.

- a. True
- b. False

9. In plain English (i.e., as if you explaining this to marketing major), explain what it means to say “on this million dollar investment, the PI equals 1.4.”

Consider the following possible problems that arise in using alternative capital budgeting decision rules, such as IRR or NPV, etc. Then, in the next three problems, choose the problems associated with the technique identified.

- I. Ignores time value of money
- II. Ignores the more distant cash flows
- III. May give ambiguous results, e.g., multiple answers
- IV. May not correctly distinguish among mutually exclusive projects

10. What are the problems associated with IRR?

- a. II only.
- b. III only.
- c. III and IV only.
- d. I, II and III only.
- e. none of the above

11. What are the problems associated with NPV?

- a. II only.
- b. III only.
- c. III and IV only.
- d. I, II and III only.
- e. none of the above

12. (4 points) Match the term with the date:

- | | |
|------------------------|-------------------|
| Ex-Dividend Date _____ | c. May 1, 2009 |
| Declaration Date _____ | d. April 18, 2009 |
| Record Date _____ | a. March 28, 2009 |
| Payment Date _____ | b. April 15, 2009 |

13. What is the optimal dividend policy? Why?

YOU HAVE 120 MINUTES TO COMPLETE BOTH PARTS OF THIS EXAM

Instructions:

- 1) The part of the exam is open book and open notes.
- 2) Partial points are based on readily observable evidence that you know at least part of the solution concept. The more evidence presented (and the clearer the evidence), the better the chance for partial points. In other words, **SHOW ALL WORK!**

1. (4 points) Suppose you believe that Du Pont's stock price is going to increase from its current level of \$82.50 sometime during the next 5 months. For \$445.25 you could sell a 5-month 100-share put option with an exercise price of \$83.00 per share. If you sold a 100-share contract for \$445.25 and Du Pont's stock price actually dropped to \$63.00, your expected profit or loss would be:

2. (4 points) The current price of a pair of jeans is \$50 and the annual risk-free rate is 6 percent. A call option with an exercise price of \$50 and six months until expiration has a current value of \$3.20. What is the value of a put option (to the nearest penny) written on the pair of jeans with the same exercise price and expiration date as the call option?

3. (5 points) consider the projects shown below. If you were hard capital rationed to \$85 for the initial investment, which project(s) should you choose?

Project:	A	B	C	D	E	F	G	H	I
Initial Cost:	10	20	30	40	50	40	30	20	10
NPV:	2.5	1.3	1.5	3.2	3.9	2.1	3.1	-7	-1.9

4. (6 points) The current price of a pair of jeans is \$55 and the annual risk-free rate is 6 percent. You can buy or sell a put option at \$2.30 and a call option at \$8.20; both with exercise price of \$50 and one year until expiration. Explain in detail how to make an arbitrage profit in this situation. Show your work for partial credit.

5. (3 points each) Consider the following cash flows, with a discount rate of 10%.

Year	Cash Flow
0	-\$884
1	-\$416
2	\$584
3	\$370
4	\$1214
5	\$400

a. What is the payback period? Based only on this decision rule, should the firm accept the project?

b. What is the Internal Rate of Return? Based only on this decision rule, should the firm accept the project?

c. What is the Net Present Value? Based only on this decision rule, should the firm accept the project?

d. What is the Profitability Index? Based only on this decision rule, should the firm accept the project?

6. Over the last 3 years Genalogics Inc. spent \$500,000 to get government approval for a new and improved vaccine. Approval has been received and the company is ready to start production on the new vaccine. If the new vaccine is produced, the company will stop production of the old version of the vaccine. Whether we produce the new or old version of the vaccine, vaccine production will be halted after four years. The CEO wants you to determine if Genalogics should begin selling the vaccine based on the following information:

The estimated unit sales for both the old and/or new vaccine are:

Year	1	2	3	4
Unit Sales	10,000	15,000	20,000	15,000

Production of the new vaccines will require \$100,000 in additional inventory, \$150,000 in additional accounts receivable and \$50,000 in accounts payable. The firm's total fixed costs will increase by \$100,000 (from \$150,000 to \$250,000) in the first year and remain at this elevated level during the production period. Variable production costs are \$60 per unit for both the old and new vaccine. Each unit of the new vaccine will be priced at \$120, while the old vaccine sold for \$80.

New production equipment will be needed. The new equipment needed to begin production costs \$600,000. Shipping costs of the equipment are \$50,000, installation will be \$100,000. We must modify the equipment before we can begin production, and this will cost \$250,000. The old equipment had a depreciable basis of \$800,000 and was bought 3 years ago. The old equipment could be sold for \$200,000 right now. The old equipment would be worthless in 4 years. At the end of the project, the New equipment will be sold for 10% of its original depreciable basis, and at that time NWC will revert to its initial before-project levels. Accounting has told us that both sets of equipment qualify for the 5-year MACRS category for tax purposes and 10 year straight-line depreciation for external reporting purposes.

The company is barely profitable and thus is in the 10% marginal tax bracket and has a required return on all its vaccine projects of 16%.

