**SIMON FRASER UNIVERSITY**
*Faculty of Business Administration*

**FINAL EXAM**

BUS 417, Security Analysis 05-1
Prof. Geoffrey Poitras

**EXAM INSTRUCTIONS**: Please record all answers in the examination book provided. Calculators with enhanced capabilities such as the ability to attach external drives, whether such drives are attached or not, are prohibited. The exam is closed book, no books or other supplementary materials are permitted to be used during the examination.

**EXAM DURATION**: TWO HOURS

**DO ALL PARTS OF ALL QUESTIONS (Each question is worth 25 total points – 10 points for part a and 15 points for part b for two part questions)**

1.a) Philip Fisher makes the following observation in Developing an Investment Philosophy (1980, p.44):

> "For those primarily seeking major appreciation of their capital, de-emphasize the importance of dividends. The most attractive opportunities are most likely to occur in the profitable, but low or no dividend payout groups. Unusual opportunities are much less likely to be found in situations where a high percentage of profits is paid to stockholders."

Comment on the implications of this statement for the valuation of common stocks. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of how security valuation would have to be conducted if the statement were correct.

b) The Fisher (1975) approach to company analysis emphasizes the importance of "four dimensions" to assess in determining the value of a company's common stock: people factors, business factors, 'the investment characteristics of some businesses' and 'the price of the investment'. Using these factors identify the three most outstanding common stock purchases from all of the different sectors that were examined during the in-class presentations. For each of these three companies, what elements of Fisher's factors could not be applied?

2.a) "The search for the 'correct' way to value common stocks, or even one that works, has occupied a huge amount of effort over a long period of time....the implementation of a system to selectively value or select common stocks is a difficult task. This is a task that a valuation model purports to accomplish."

Describe some of the discounted cash flow valuation models conventionally used to analyse common stocks. What are some important limitations of using accounting data to implement discounted cash flow valuation? What is the appropriate variable to use for the cash flow that is to be discounted? Explain the rationale for your selection.

b) i) Describe how a company such as Adobe can use current accounting standards for employee stock option compensation to manipulate the earnings reported in the income statement.
ii) What is a "classical immunization" strategy? What conditions are required to ensure that a classical immunization strategy will protect the surplus of a fixed income portfolio from changes in interest rates?

3. Ben Graham made the following observation in the Intelligent Investor:

> "The distinction between investment and speculation in common stocks has always been a useful one and its disappearance is a cause for concern. We have often said that Wall Street as an institution would be well advised to reinstate this distinction and to emphasize it in all dealings with the public. Otherwise the stock exchanges may some day be blamed for heavy speculative losses, which those who suffered them had not been properly warned against".

Comment on the implications of this statement for the valuation of securities. In your answer be sure to provide an assessment of the validity of the statement as well as a discussion of how security valuation would have to be conducted if the statement were correct.

4. a) Explain this statement: "...the larger the convexity on a portfolio, the less the value of the portfolio rises over time if the interest rate remains unchanged." What are the implications of this result for the asset/liability managers seeking to control interest rate risk? (Hint: In your answer be sure to address the tradeoff between time value and convexity.) Is it true that "the cost of a higher convexity is a lower yield"?

b) Contrast the solutions to the life annuity valuation problem developed by de Witt, Halley and de Moivre. Be sure to explain: the connection of the pricing formulas to pricing using discounted expected value; and, to identify the limitations for each of the solutions.

***BONUS QUESTIONS:*** (5 points each)

B1. You are in the market for a house. Your effective all-in market borrowing rate for a house mortgage from a bank is 6%. One of the houses you are considering purchasing has an assumable $300,000, 5 year mortgage at 8%, with a 20 year amortization. The asking price on the house is $600,000. What reduction in the sales price of the house is warranted if, as part of the purchase, you assume the vendor's mortgage?

B2. Assuming arithmetically declining death rates and an interest rate of 8%, what is the modified duration of a life annuity for a 22 year old person that cannot live beyond 90 years.