African Economic Research Consortium
Collaborative Masters Programme (CMAP) - 2008

CFI II: CORPORATE FINANCE AND INVESTMENTS II
End of Semester Examination (Weight: 60%)

Instructions:
1. There are FIVE questions divided into two sections. Attempt ALL questions in section I and ANY ONE Questions in Section II
2. Time allowed is THREE hours. Points for each question are indicated to help you budget your time
3. Be neat, clear and to the point. Importance will be attached to these in grading your work

SECTION I: Attempt ALL QUESTIONS in this Section

QUESTION ONE (25 marks)

(a) Explain the weak and strong forms of market efficiency as they apply to stock exchanges. With support of relevant examples discuss how you can test the weak form and strong form of market efficiency. **(10 marks)**

(b) Discuss the following situations as they relate to the efficient market hypothesis:

i. On May 1997, the government of Kuwait offered to sell 170 million shares worth nearly $2billion. Goldman Sachs was contacted after the stock market closed in London and given one hour to decide whether to bid for the stock. They decided to offer $11.59 per share and Kuwait accepted. Then Goldman Sachs went looking for buyers. They lined up 500 institutional and individual investors worldwide, and resold all the shares at $11.70. The resale was completed before the London Stock Exchange opened the next morning. Goldman Sachs made $15 million overnight. What does this deal say about market efficiency? Discuss. **(5 marks)**

ii. Your broker commented that well managed firms are better investment than poorly managed firms. As evidence your broker cited a recent study examining 100 small manufacturing firms that, eight years earlier, had been listed in an industry magazine as the best-managed small manufacturers in the country. In the ensuing eight years, the 100 firms have not earned more than the normal market return. Your broker continued to say that if the firms were well managed, they should have produced better-than-average returns. Assuming market efficiency, do you agree with your broker? Explain. **(5 marks)**

iii. A particular macroeconomic variable that influences ABC Ltd's earnings is positively serially correlated. Assuming market efficiency, would you expect price changes in ABC Ltd stock to be serially correlated? Why or why not? **(5 marks)**

QUESTION TWO (25 marks)

(a) Compare and contrast the net present value and the internal rate of return methods as they are used in evaluating investments clearly pointing out when the two can lead to conflicting recommendations **(10 marks)**

(b) Bongo Feeds is considering a proposal to manufacture a high protein chicken feed. The initial investment in plant and equipment is estimated at $ 600,000. This could be depreciated for tax purposes on straight line basis over 5 years. However, Bongo Feeds expects to terminate the project at the end of four years and to resell the plant and equipment for $ 200,000. The plant and equipment will be installed in an existing warehouse, which is currently rented out to a neighboring firm. The next year rent charge on the warehouse is $50,000 and thereafter the rent is expected to grow in line with inflation at 4 percent per year. In addition to the plant and equipment, the project will require an investment in working capital. This is forecasted to be 10 percent of sales in each year and is assumed to arise at the beginning of the year.
Sales of the feed are expected to be $2,100,000, and thereafter sales are forecasted to grow by 5 percent a year. Manufacturing costs are expected to be 80 percent of sales. Bongo Feeds' profit and capital gains are subject to 30 percent tax while its cost of capital is 12 percent.
Evaluate the project using the net present value and discounted payback methods. Comment on the viability and riskness of the project **(15 marks)**

QUESTION THREE (25 marks)

(a) Explain the following as they are used in relation to dividend theory pointing their effects on setting dividend policy
  i) Clientele effect **(5 marks)**
  ii) "Home made" dividend **(5 marks)**
  iii) The information content of dividend **(5 marks)**

(b) The shares of X Ltd are currently trading at $100 a share and are expected to offer a pre- personal tax return of 10 percent per annum. Two investor, A and B, both of whom have an investment horizon of three years and are in the 30 percent tax bracket for both income and capital gain, have different views on the dividend policy that X Ltd should follow. Investor A prefers the company to payout all its earnings as dividend. She believes that she can invest her after-tax dividend at the same rate as X Ltd, that is, 10 percent, with no transaction costs. She will, however, leave the reinvested dividend to accumulate until the end of the three years investment horizon. Investor B prefers the company to plough-back all the earnings and realize the capital gain at the end of the three years investment horizon. Assume that the appropriate required rate of return for both investors is 10 percent.
  i) Show the effect of the preferred dividend policy on each investor's wealth **(8 marks)**.
  ii) Explain why the outcomes are similar or different. **(2 marks)**

SECTION II: Attempt ANY ONE QUESTION from this Section

QUESTION FOUR (25 Marks)

(a) Compare and contrast an American option and a European option. *Ceteris paribus,* which one is likely to sell at a higher price? Why? **(5 marks)**.

(b) Explain the meaning and function of interest rate swaps **(8 marks)**

(c) Western Company and Marauder Ltd both need to raise $10 million to fund improvements in their manufacturing plants. Western has been in business for 40 years and has a very good credit rating. It can borrow at either a fixed rate of 10 percent or at a floating rate based on the T-Bill plus 3 percent. Marauder has experienced some financial distress recently and does not have a strong credit history. It can borrow at either a fixed rate of 14 percent or at a floating rate based on the T-Bill plus 4 percent. Western believes that the general level of interest will fall in upcoming years and therefore would prefer to borrow at a floating rate of interest. Due to its financial difficulties, Marauder would prefer to borrow at a fixed rate of interest so that unexpected increases in the general level of interest rates will not force the firm into bankruptcy.

i) Determine if there is an opportunity for Western Company and Marauder Ltd to benefit from a swap that will not involve an intermediary **(4 marks)**.

QUESTION FIVE (25 Marks)

(a) One approach in estimating the value of a firm is by discounting the cashflows accruing to fund providers. Show that, with both corporate and personal taxes, this approach gives the value of levered firm as

$V_L = V_U + \left(1 - \frac{(1-T_C)x(1-T_S)}{(1-T_B)}\right)B$ where V_L, V_U, T_C, T_S, T_B, and B are the value of the levered firm, the value of the unlevered firm, corporate tax rate, personal tax rate on equity distribution, personal tax rate on interest income, and the value of bond respectively. **(8 marks)**

(b) Consider a situation where the personal tax rates on equity distribution, T_S, and on interest income, T_B, are equal. Explain the effect on the value of the firm if the tax authority decides to increase T_B and keep T_S unchanged. What is the logic behind your explanation? **(4 marks)**

(c) Habash Transporters is a leveraged firm that generates annual earnings before interest and taxes amounting to $110,000. It is expected that these earnings will continue in perpetuity regardless of the firm's capital structure. The firm is subject to a corporate tax rate of 35 percent and has a policy of paying out all its earnings as dividend at the end of each year. It is estimated that the required rate of return of the firm's unlevered equity is 20 percent. Further, personal taxes on interest income and equity distribution are 25 percent and 10 percent respectively.
Habash has $200,000 in excess cash that it is planning to use either to retire all of its outstanding debt of to repurchase equity. The firm's debt is held by one institutional investor who is willing to sell it back to Habash for $200,000 with no charge as transaction cost. Once Habash becomes an all-equity firm it will remain unlevered forever. Repurchasing stock will be done in the open market also without transaction costs.

i. Estimate Habash's market value if it chooses to retire all of its debt and become an unlevered firm **(5 marks)**
ii. Estimate Habash's market value if it decides to repurchase stock instead of retiring its debt. **(5 marks)**
iii. Do you think Habash's shareholders would prefer one use of the excess cash over the other? Explain **(3 marks)**