AFRICAN ECONOMIC RESEARCH CONSORTIUM

Collaborative MA Programme in Economics for Anglophone Africa (Except Nigeria)

JOINT FACILITY FOR ELECTIVES (JFE)

JUNE – OCTOBER 2008

CORPORATE FINANCE AND INVESTMENT I

First Semester: Final Examination

Duration: 3 Hours   Date: Friday, August 15, 2008

INSTRUCTIONS:

1.   Answer ANY FOUR of the following six questions. Each question carries 25 marks.

2.   Candidates are allowed to bring into the examination room calculators and written formulas with NO TEXT WRITTEN ON THEM.

Question 1

(a) Sam bought a call option with a July expiration date on Impala stock for Tsh 1,000 per share and the strike price of the option was Tsh 5,000 per share. In June, Impala stock was selling for Tsh 8,000 per share. By the July expiration date, Impala stock had settled down to Tsh 6,550 and the maximum price at which Impala stock had been selling was Tsh 8,000.

   (i)   If this was a European-style option, what is the most profit that Sam could have made by exercising it?   [2 marks]

   (ii)   If this was an American-style option, what is the most profit that Sam could have made by exercising it?   [2marks]

(b) Susan enters into a forward contract with Joseph under which Susan will buy Joseph's 27,000 shares in KCB Plc for Tsh 7,000 each in two month's time. What will the contract be worth to each party on maturity if KCB Plc shares end up selling in the secondary market at that time for

   (i)   Tsh 7,300
   (ii)   Tsh 6,891
   (iii)   Tsh 7,000

                                                                                                      [6marks]
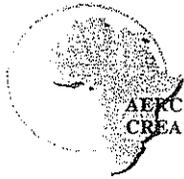
(c) "The overall function of a financial market is to facilitate the flow of funds from units in the economy with a financial surplus to those with a financial deficit". What characteristics do primary and secondary financial markets need to exhibit in order to perform this function efficiently? Explain.

[15marks]

Question 2

(a) A company's stock turnover ratio has deteriorated from 15 days to 20 days. What possible factors could account for this? [3marks]

(b) Imagine that you are a financial manager of a Tanzanian construction company, NHC Plc, who has just received financial statistical data about the performance of other companies in Tanzania. Discuss in detail **two** advantages and **three** disadvantages of such an interfirm comparison.

[10marks]

(c) "Company financial statements, including profit and loss accounts, balance sheets and cash flow statements are used by a variety of individuals and institutions for a wide variety of reasons". Explain why each of the following groups might need financial statement information. What type of financial information would each group find most useful?

     (i)   The company's existing shareholders
     (ii)   Financial analysts
     (iii)   Company managers
     (iv)   Current employees
     (v)   Current customers
     (vi)   Government

[12marks]

Question 3

(a) Threats industries Inc. is considering an investment that requires an initial capital outlay of Tsh 25,000,000. The new investment is expected to result in cash inflows of Tsh 3,000,000 at the end of year 1, Tsh 6,000,000 at the end of year 2 and 3, Tsh 10,000,000 at the end of year 4, Tsh 8,000,000 at the end of year 5, and Tsh 7,000,000 at the end of year 6. Assuming that the cost of capital is 15 %, evaluate whether Threats industries Inc. should invest in this project.

[8marks]

(b) Determine the equal annual end-of-year payment required each year over the life of the loans shown in the following table to repay them fully during the stated term of the loan.
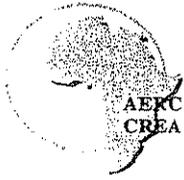
Loan	Principal (Tsh 000s)	Interest rate (%)	Term of loan (years)
A	15,000	8	3
B	60,000	12	10
C	75,000	10	30
D	4,000	15	5

[8marks]

(c) Mrs Jane Rice wishes to choose between two equally costly cash flow streams: annuity A and annuity B. A is an *annuity due* with cash inflow of Tsh 9,000,000 for each of 6 years. B is an *ordinary annuity* with a cash inflow of Tsh 10,000,000 for each of 6 years. (Assume that Mrs Jane Rice can earn 15 % on her investments)

(i)   On a purely subjective basis, which annuity do you think is more attractive? Explain your answer. [3marks]

(ii)   Find the future value at the end of year 6, for both annuity A and annuity B. [4marks]

(iii)   Use your finding in part (ii) to indicate which annuity is more attractive. Compare your finding to your subjective response in (i). [2 marks]

Question 4

(a) Briefly describe how management can use the lock-box system to reduce customer collection float time. [6 marks]

(b) Threats Ltd has daily cash receipts of Tsh 80,000,000 and a recent analysis shows that the company has a collection float of 5 days. If the firm's opportunity cost is 15 % per annum, would it be economically advisable for the firm to pay an annual fee of Tsh 2,000,000 to reduce collection float by 2 days? [6 marks]

(c) The standard deviation of the daily net cash flows for Santos Ltd is Tsh 50,000. The fixed cost of buying and selling securities is Tsh 50,000 per transaction. Santos Ltd can invest the idle cash at an annual rate of 15 % and does not want its cash level to drop below Tsh 1,000,000

(i)   Using the Miller-Orr model, what is the optimal cash balance for Santos Ltd? [3 marks]

(ii) What is the upper control limit? [2 marks]

(iii) Using the values computed above, explain how the firm will manage cash and marketable securities. [5 marks]

(iv) How will the firm's cash holdings be affected by the following factors;

- An increase in the opportunity cost of holding cash
- An increase in the variance of daily net cash flows
- A decrease in the transaction costs associated with buying and selling of securities

[3marks]

Question 5

(a) Explain two ways in which a firm can monitor its accounts receivable.

[4marks]

(b) Briefly discuss some of the complications that may arise when credit management crosses borders.

[6marks]

(c) Identify and discuss three factors that may influence a firm's decision in setting a credit period.

[6marks]

(d) Arusha manufacturing has three possible suppliers, each offering identical products and services but different credit terms. The credit terms for each of the three suppliers are shown in the table below.

Supplier	Credit terms
X	1/10 net 55 EOM
Y	2/10 net 30 EOM
Z	2/10 net 60 EOM

(i) Determine the annual interest cost of not taking the cash discount from each supplier.

[6 marks]

(ii) Assuming the firm needs short-term financing, and has a bank line of credit with a current interest rate of 15 %, should the firm take the cash discount?

[3marks]
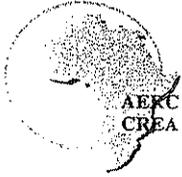
Question 6

(a) What are the main differences between the capital market line and the security market line?

[6 marks]

(b) The financial manager of Soaks Ltd is attempting to evaluate four investment projects, A to C, using the capital asset pricing model. The relevant information is presented in the table below.

Item	Rate of return (%)	Beta
Risk-free asset	10	0
Market Portfolio	15	1.00
Project A	—	1.50
Project B	—	0.75
Project C	—	2.00

Calculate the required rate of return and risk premium for each project, given its level of nondiversifiable risk.

[6 marks]

(c) Consider a regression analysis of five shares V to Z that are estimated using the following equation $R_i = R_{rf} + \beta_i (R_m - R_{rf}) + \varepsilon_i$.

Where R_i = Actual return of an individual share
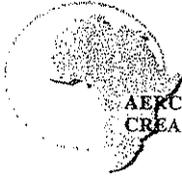
R_{rf} = Risk free rate of interest

β_i = Beta of an individual share

R_m = Actual market return

ε_i = Random error

The regression results are presented in the table below

Share	Beta	Specific risk (%)	Annual return (%)
V	0.6	25	20
W	0.8	35	15
X	0.7	55	7
Y	1.1	30	18
Z	0.9	40	10

If $R_{rf} = 9\%$, $R_m = 14\%$, the standard deviation of the market is $\sigma_m = 0.2$ and an investor has equal amounts invested in the five shares

Calculate:

(i)   The portfolio's beta.   [2 marks]

(ii) The total risk of the portfolio.   [5 marks]

(iii) The actual return of the portfolio.   [2 marks]

(iv) The systematic return of the portfolio as required by the CAPM.   [2marks]

(v)   Use the results from (i) - (iv) above to evaluate the performance of the portfolio.

[2marks]