AFRICA UNIVERSITY

(A United Methodist-Related Institution)

"Investing in Africa's Future"

COURSE TITLE: **MEC207 MONEY AND BANKING**
MAC205 MONEY AND CAPITAL MARKETS

SEMESTER: **ONE**

EXAMINATION: **FINAL EXAMINATION- SEP 2014**

LECTURER: **MR T. MASESE**

TIME: **3 HOURS**

INSTRUCTIONS

Answer **Questions ONE and ANY other TWO Questions from this paper**

Total possible mark is 60**.**

Start **each** question on a new page in your answer Booklet.

The marks allocated to **each** question are shown at the end of the section.

Show all your workings.

Credit will be awarded for logical, systematic and neat presentations.

Question One (25 marks)

a. You have just won a lottery that promises to pay $1000 000 exactly ten years from today. Because the $1000 000 is guaranteed by the government, opportunities exist to sell the claim to the lottery today for an immediate lump-sum cash payment. What is the least you will sell your claim to the lottery if you could earn 12% interest as return during the ten year period **(2 marks)**

b. You plan to make a series of deposits in an interest-bearing account. You will deposit $1000 today, $2000 at the end of 2 years and $8000 at the end of 5 years. If you withdraw $3000 at the end of 3 years and $5000 at the beginning 7 years, how much will you have after 8 years if interest rate is 9%? How much is the present value of these cash flows **(4 marks)**

c. Explain the major problems that arise from asymmetric information in financial markets. Explain the advantages of an efficient financial system to the economy. With the aid of a flow diagram briefly explain how funds flow through the financial system clearly distinguishing between direct and indirect finance. **(4 marks)**

d. Kuda has just joined your company as an intern and you have to teach her a bit about financial markets and securities. Explain to her how a negotiable certificate of deposit differs from bankers' acceptance and tell her what it means if a portfolio has a correlation coefficient of -1. Define for her the following terms commonly used in financial language; (i) Stand-alone risk (ii) market risk (iii) risk attitude (iv) primary market (v) capital market (vi) deferred annuity. **(7 marks)**

e. Calculate the expected return on a $40000 portfolio consisting of Econet, Barclays, Meikles and Dawn shares whose respective expected returns are a 14%, 13%, 20% and 18% if 10% of the portfolio is in Econet shares and an equal amount has been spent on each of the remaining stocks. **(2 marks)**

f. Distinguish between an ordinary annuity and an annuity due. Suppose that you want to buy a car on an "easy payment" scheme of $5,000 a year at the end of each of the next 3 years. What is the present value of this payment scheme if interest rate is 10%? How would this change if you made your first deposit of $5000 now? **(4 marks)**

g. Fuel P/L has an issue of preferred stock outstanding that pays a dividend of $4.50 every year in perpetuity. If this issue currently sells for $46 per share, what is the required return? **(2 marks)**

Question Two (25 marks)

a) Explain adverse selection and moral hazard with reference to financial markets and institutions and outline the causes of these problems. Why would you be willing to make a loan to your neighbor by putting funds into a savings account earning 5% interest rate at the bank and having the bank lend her the funds at a 10% interest rate rather than lend her the funds yourself? **(5 marks)**

b) Bond Z is a zero coupon bond with a $1,000 face value and matures in 30 years. If the appropriate discount rate is 10%, what is the value of the bond? **(2 marks)**

c) You have an option to choose between two investments. Investment J pays you $480 at the beginning of each of the next 2 years and then pays $379 at the beginning year 3 and year 4, $450 at the beginning of year 5 and $800 at the beginning of year 6. Investment Z pays $1000 at the end of each year for 6 years. If the rate of interest earned on investment is 8%, calculate the present value and the future values of each of the investments at the end of year 6. **(6 marks)**

d) You have just been employed as an investment analyst at BancAbc Asset Management P/L and they want you to explain a few concepts to Edith, a young investor who wants to try her luck by investing in bonds. Explain the following concepts for Edith:

   i. Face Value **(1 mark)**
   ii. Premium bond **(1 mark)**
   iii. Perpetuity **(2 mark)**
   iv. Call Provision **(2 mark)**

e) **Write brief notes on the following:**

   i. Negotiable Certificate of deposit **(2 marks)**
   ii. Bankers Acceptance **(2 marks)**
   iii. Repurchase agreements **(2 marks)**

Question Three (25 marks)

a. If financial markets and the banking system are left unregulated two problems, adverse selection and moral hazard, arise between lenders and borrowers due to information asymmetry. Briefly explain the concept of asymmetric information and explain the two problems explaining how and when they arise. Give three reasons why the government heavily regulates the financial markets. Outline major regulatory mechanisms applied by the central bank to the banking sector **(12 marks)**

b. Bond C has a $1,000 face value and provides an 8% annual coupon interest for 30 years. If the appropriate discount rate is 10%, calculate the value of this coupon bond **(3 marks)**

c. Briefly explain the differences between capital and money markets, primary and secondary markets giving an example of an asset traded in each of these financial markets **(5 marks)**

d. Bond C has a $1,000 face value and provides an 8% annual coupon paid semi-annually for 15 years. If the appropriate annual discount rate is 10%, what is the value of the coupon bond? **(3 marks)**

e. Stock PS has an 8%, $100 par value issue of preferred stock outstanding. The appropriate discount rate is 10%. What is the value of the preferred stock? **(2 marks)**

Question Four (20 marks)

a. A firm is experiencing a period of rapid growth. Expectations are that dividends will grow at a rate of 15% during the first two years, at 13% in the 3rd year, 10% in the 4th year and at a constant rate of 5% thereafter. The firm's next dividend is expected to be $1.50 and investors require a return of 9% on this stock.

   i. Calculate the dividends to be earned in years 2, 3, 4 and 5 and advice an investor the maximum he should pay for 3000 shares of this firm today **(10 marks)**

ii. Calculate P_1, P_2, P_3 and P_4 **(4 marks)**

iii. Calculate the parts of the return attributable to dividends and to share price changes gains for Years 1, 2, 3 and 4 **(5 marks)**

b. What are the two parts of a stock's expected total return. Assume that Macro Diamond's next dividend is $1.242. The dividend yield for this stock is 5.4% and its investors expect the dividend to grow at a constant rate of 8% into the future. Calculate D_0, D_{10} , D_{25} and the value the Macro Diamond P/L share today **(6 marks)**

Question Five (20 marks)

c. The return on Econet and Barclays shares depend on demand conditions and have the following probability distributions:

Demand Condition	Probability	Return on Econet	Return on Barclays
High	0.6	35%	18%
Average	0.2	8%	8%
Moderate	?	18%	12%

i. Calculate the expected rates of return for each of the stocks **(4 marks)**

ii. What does it mean when an investor is said to be risk averse. Calculate the stand-alone risk and the coefficients of variation for each of the firms **(8 marks)**

iii. Assuming that you hold a portfolio investment of $40000 worthy of stocks consisting of $15000 Econet stocks and the rest in Barclays stock, what is the expected return for your portfolio? What does it mean if the correlation coefficient for this portfolio is +1? **(5 marks)**

d. Suppose that your auto dealer gives you a choice between paying $15,500 cash for a new car or entering into an installment plan where you pay $8,000 down today and

make payments of $4,000 in each of the next two years. Which is the better deal for the car dealer assuming an interest rate of 8%? **(4 marks)**

e. In general, the quoted (or nominal) interest rate on a debt security, k, is composed of a real interest rate of interest, k*, plus several premiums that reflect various risks. Outline and explain these main risk premiums and what they reflect **(6 marks)**

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