MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
FOURTH YEAR FIRST SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS
BACHELOR OF BUSINESS MANAGEMENT

COURSE CODE: BBM 413

COURSE TITLE: FINANCIAL ECONOMICS

DATE: 3RD DECEMBER 2018 **TIME: 11.00 AM -1.00PM**

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **THREE** questions

This paper consists of 3 printed pages. Please turn over.

QUESTION ONE

(a)

(i) You agree to deposit Ksh. 500 at the end of every year for 3 years in an investment fund that earns an interest of 6 percent. How much will your investment be worth by the end of the three years? **2 marks**

(ii) Based on Part (i), now assume that you deposit the Ksh. 500 at the beginning of the year. How much will your investment be worth by the end of the three years? **2 marks**

(iii) You have a choice to be paid Ksh. 100 at the end of each of the next three years or a lump-sum today. If the interest rate is 5 percent, how big does the lump sum have to be to make the choices equally good? **2 marks**

(iv) How much money should you have right now to make you as good as someone who agrees to receive Ksh. 500 at the beginning of each year for the next three (3) years considering that the interest rate is 6 percent? **2 marks**

(a) Explain six roles of financial markets in Kenya **10 marks**

(b) A financial economist used linear regression analysis to measure its economic exposure to foreign exchange rate fluctuations. The following was the output of the regression analysis. **6 marks**

Dependent Variable: Cash Flow Exposure				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Domestic Inflation	-0.046	0.091	-0.511	0.013
Foreign Currency Exchange Rate	-0.002	0.043	-0.046	0.064
Political Stability	0.011	0.110	0.100	0.001
Adjusted R-squared	0. 510	S.D. dependent		0.160

i. Interpret the coefficients and magnitudes of Domestic Inflation, Foreign Currency Exchange Rate, and Political Stability.

ii. Comment on the relationship between the country's cash flow exposure and political stability. **1 mark**

QUESTION TWO

Telco Corporation currently has no debt in its capital structure and it is considering issuing debt to buy back some of its equity. You are given the following information for the company before and after restructuring with the possible outcomes.

		States of nature		
		Recession	**Expected**	**Expansion**
With no debt	EPS	1	3	5
	EBIT (KES)	400	1,200	2,000
With debt	EPS	0	4	8
	EBIT (KES)	400	1,200	2,000

EPS = Earnings per share, EBIT = Earnings before interest and tax

(a) In one well-labeled diagram, plot the EPS-EBIT tradeoff for the with-debt cases and with-no-debt case **4 marks**

(b) Explain why: **6 marks**
   (i) The with-no-debt line begins at the origin
   (ii) The with-debt line begins below the origin
   (iii) The with-debt line is steeper than the with-no-debt line

(c) Mathematically derive the breakeven point EPS and EBI **5 marks**

QUESTION THREE

A two-asset portfolio comprising assets X and Y has the following state-contingent returns with the respective probabilities.

Probability	Return on x_i	Return on y_i
0.30	11.0%	-3.0%
0.14	9.0%	15.0%
0.20	25.0%	2.0%
0.18	7.0%	20.0%
0.18	-2.0%	-6.0%

(a) Compute the following metrics (use 3 decimal places where necessary)

(i) Expected value of x, $\epsilon(x)$
(ii) Expected value of x, $\epsilon(y)$
(iii) Variance of x, $Var(x)$ **8 marks**
(iv) Variance of y, $Var(y)$
(v) Covariance of x and y, $cov(x, y)$
(b) Calculate the portfolio variances of the stock in Part (a) given the following weights **5 marks**

Percentage in X	Percentage in Y
60	40
25	75

(c) Based on the computations in (b), which asset combination should the firm adopt? **2 marks**

QUESTION FOUR

a) Brian, a financial analyst at Eggs Ltd, is thinking about recommending that Milton Inc. invests in a piece of land that currently costs Ksh. 105,000. She is certain that next year the land will be worth Ksh. 91,000. Given that the guaranteed interest rate in the bank is 10 percent, should Milton Inc. undertake the investment in land? **7 marks**

b) Suppose there are only two stocks in the world: Stock X_1 and Stock X_2. The expected returns of these two stocks are 8 percent and 12 percent, while the standard deviations of the stocks are 5 percent and 15 percent, respectively. The correlation coefficient of the two stocks is zero. **8 marks**

i. Calculate the expected return and standard deviation of a portfolio that is composed of 35 percent X_1 and 65 percent X_2

ii. Calculate the expected return and standard deviation of a portfolio that is composed of 90 percent X_1 and 10 percent X_2

QUESTION FIVE

(a) Explain the following terms as used in financial economics **10 marks**

(i) Primary financial markets
(ii) Secondary financial markets
(iii) Adverse selection
(iv) Moral hazards
(v) Risk-return tradeoff

(b) The net present value for an investment is given by the formula: **4 marks**

$$NPV = \sum_{n=1}^{n} \frac{CF}{(1+r)^n} - I_0$$

Where: CF= per-period cash flow, r = the required rate of return, n = number of cash flow periods, and I_0= the initial Cost outlay

State and explain the nature of relationship between each of the variables (whether positive, negative, or zero) with the NPV

(C)State one demerit of using NPV as an investment evaluation criterion **1 mark**

SOME FINANCIAL ECONOMICS FORMULAE

✓ **Present Value of a Single Cash Flow**	➢ PV = $\frac{FV_n}{(1+i)^n}$
✓ **Expected Portfolio Return**	➢ $(\hat{R}_P) = W_1X_1 + W_2X_2 + \cdots + W_nX_n \equiv \sum_{i=1}^{n} W_iX_i$
✓ **Future value**	➢ $Future\ value = PV\ (1+r)^n$
✓ **Future Value of an Annuity Due**	➢ $FVAND_n = PMT\left[\frac{(1+i)^n - 1}{i}\right](1+i)$
✓ **Future Value of an Ordinary Annuity ($FVAN_n$)**	➢ $FVAN_n = PMT[\frac{(1+i)^n - 1}{i}]$
✓ **Portfolio Standard Deviation**	➢ $\delta(portfolio) = \sqrt{X_A^2\delta_A^2 + 2X_AX_B\delta_{AB} + X_B^2\delta_B^2}$
✓ **Present Value of Annuity Due**	➢ $PVAND_n = PMT\left[\frac{1-\frac{1}{(1+i)^n}}{i}\right](1+i)$
✓ **Present Value of Ordinary Annuity**	➢ $PVAN_n = PMT\left[\frac{1-\frac{1}{(1+i)^n}}{i}\right]$
✓ **Value of the Levered firm**	➢ $V_L = \frac{EBIT(1-T_C)}{r_0} + T_CB$
✓ **Value of the Unlevered Firm**	➢ $V_u = \frac{EBIT(1-T_C)}{r_0}$
✓ **CAPM**	➢ $Expected\ return = r_f + \beta(r_m - r_f)$ Where: $r_f = risk - free\ rate, \beta = beta, and\ r_m = return\ on\ the\ market$