KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF ECONOMICS

EAE 813: THEORY OF FINANCE

DATE: FRIDAY 2ND FEBRUARY 2018 **TIME: 9.00 A.M. – 12.00 P.M.**

INSTRUCTIONS

Attempt ALL the questions

Q1 (a) Graphically demonstrate the Fisher separation theorem for the case where an individual ends up lending in financial markets (6 marks)

(b) Graphically analyse the effect of an exogenous decrease in the interest rate on

(i) The utility of borrowers and lenders (6 marks)

(ii) The present wealth of borrowers and lenders (6 marks)

(iii) The investment in real assets (7 marks)

Q2 (I)Assume that you have a logarithmic utility function for wealth $U(w) = \ln(w)$ and that you are faced with a 50/50 chances of winning or losing 100.

(a) How much will you pay to avoid this risk if your current level of wealth is 10,000? (5 marks)

(b) How much would you pay if your level of wealth were 1000,000 (5 marks)

(II) You have estimated the following probabilities for earning per share of companies A and B

Probability	A	B
0.1	0	-0.5
0.2	0.5	0.25
0.4	1	0.25
0.2	2	3
0.1	3	4

(a) Calculate the mean and variance of the earning per share for each company(5 marks)
(b) Explain how some investors might choose A and others might choose B if preferences are based on means and variance (5 marks)
(c) Compare A and B using the second –order stochastic dominance criteria (5 marks)

Q3 You are given the following information

	Pay-offs		
State	1	state 2	security prices
Security j	12	20	pj=22
Security k	24	10	pk=20

(a) What are the prices of pure security 1 and pure security 2? (5 marks)
(b) What is the initial price of a third security i for which the pay-off in state 1 is 6 and the pay-off in state 2 is 10? (5 marks)

(c) Suppose X and Y represents the returns from two assets.

%in X	125	100	75	50	25	0	-25
%in Y	-25	0	25	50	75	100	125

(a) Calculate the mean and variance for the above portfolios (5 marks)
(b) Find the portfolio that has the minimum variance (5 marks)
(c) Let portfolio A have 75% in X and portfolio B have 25% in X. calculate the covariance between the two portfolios (5 marks)

Q4 (I) Let us assume a normal distribution of returns and risk-averse utility functions. Under what conditions will all investors demand the same portfolio of risky assets (5 marks)

(II) The following data have been developed for the Davin company

State	probability	market return	return for the firm
1	0.1	-0.15	-0.3
2	0.3	0.05	0.00
3	0.4	0.15	0.2
4	0.2	0.2	0.5

The risk free rate is 6%

(a) The expected market return (4 marks)
(b) The variance of the market return (4 marks)
(c) The expected return for the company (4 marks)
(d) The covariance of the return for the company with the market return (4 marks)
(e) Write the equation of the security market line (4 marks)