FACULTY OF ECONOMIC AND FINANCIAL SCIENCES

DEPARTMENT OF ECONOMICS AND ECONOMETRICS

SUBJECT	ECONOMICS 3C (EKN3C01/ECO3CA3)	**DATE**	2016-06-04
CAMPUS	APK	**TIME**	12:30 – 15:30 (3 Hours)
ASSESSMENT	FINAL EXAM	**MARKS**	100
EXAMINERS	Mr. SB Ngobese	**PAGES**	7
MODERATOR:	Prof. JWM MWAMBA (INTERNAL) Mr I Mhlanga (EXTERNAL)		

Test instructions:

1. Read carefully through the question before you answer.
2. Answer all questions in a logical flow and write neatly.
3. Show all calculations, round off to 4 decimals.
4. Label all graphs.
5. Answer all questions in pen. Work done in pencil will not be marked!

Student No.   : _____

Surname and Initials   : _____

Contact No.   : _____

SECTION A   [18]

1. Match each concept on the right column to the explanation on the left column. Write the alphabet that matches the explanation.   [12]

Explanation	Concept
i. Assets used to produce goods and services	A. Strong-form EMH
ii. Choice of specific securities within each asset class	B. Agency problem
iii. Attempting to identify mispriced securities or to forecast broad market trends	C. Behavioural Finance
iv. Conflicts of interest between managers and stockholders	D. Technical analysis
v. Assertion that stock prices already reflect all publicly available information	E. Behavioural Biases
vi. The assertion that stock prices reflect all relevant information, including inside information	F. Real Assets
vii. Patterns of returns that seem to contradict the efficient market hypothesis	G. Information processing
viii. Research on recurrent and predictable stock price and proxies for buy or sell pressure in the market	H. Semistrong-form EMH
ix. Models of financial markets that emphasize potential implications of psychological factors affecting investor behaviour	I. Security selection
x. Errors that can lead investors to misestimate the true probabilities of possible events or associated rates of return	J. Anomalies
xi. Affect how investors frame questions of risk versus return, and therefore make risk-return trade-offs.	K. Breadth
xii. The extent to which movements in broad market indexes are reflected widely in movements of individual stock prices	L. Active management

2. Upon hearing the news of an appointment of a new highly qualified and experienced CEO in company. Use an appropriate diagrammatic sketch to explain efficient and inefficient price reactions; under EMH.   (6)

SECTION B   [32]

1. Suppose an investor has R42 000 and she invests R31 500 in the risky portfolio and the remaining money in the risk-free asset. If the risk-free rate is 5%, the expected return for the risky portfolio is 14% and the standard deviation of the risky portfolio is 22% then: [10]

   a. Calculate the expected return and standard deviation of the complete portfolio   (2)
   b. Calculate the price of risk   (2)
   c. Calculate the reward-to-volatility of the risky portfolio   (2)
   d. Calculate the reward-to-volatility of the complete portfolio   (2)
   e. Calculate the investor's preferred capital allocation, y (2)

2. Answer the following questions.   [18]

Scenario	Probability	Stock fund (%)	Bond Fund (%)
Severe recession	.05	-37	-9
Mild recession	.25	-11	15
Normal Growth	.40	14	8
Boom	.30	30	-5

i. Calculate the expected return of the Stock and Bond fund   (4)

ii. Calculate the standard deviation of the Stock and Bond Fund   (4)

iii. Calculate the Covariance between the returns of the stock and bond funds. Interpret your answer   (6)

iv. Calculate the Correlation Coefficient between the returns of the stock and bond funds. Interpret your answer   (4)

3. Assume that $r_f = 9\%$. Consider the following information relating to observed returns for market portfolio M and three other portfolios A, B, and C.   [4]

Portfolio	$E(r_P)$	Beta	σ_P
M	25%	1	18%
A	32%	?	15%
B	16%	0.5	20%
C	10%	0	5%

i. Which portfolio has the highest amount of total risk?   (1)

ii. If A is correctly priced, what must its beta value be?   (1)

iii. Determine whether portfolios B and/or C are overpriced. Motivate your answer.   (2)

SECTION C   [20]

1. Consider the two bonds described below:

	Bond X	Bond Y
Maturity	25 yrs.	12 yrs.
Coupon Rate (Paid semiannually)	5%	10%
Par Value	$1,000	$1,000

(a) If both bonds had a required return of 7%, what would the bonds' prices be? (4)

2. Assume the interest rate on a 1-year T-bond is currently 7% and the rate on a 2-year bond is 9%. What is the reasonable forecast for the rate on a 1-year bond next year? (2)

3. Suppose that two-year maturity bonds offer yields to maturity of 6% and three-year bonds have yields of 7%. What is the forward rate for the third year? (2)

4. Suppose the semi-annual coupon payment is R40 and four months have passed since the last coupon payment made at the end of June. What is the accrued interest? If the quoted price is R950, then what is the invoice price? Assume 360 days in a year. (4)

5. Explain the Industry Life cycle, make use of an illustration. (4)

6. Explain how these determinants of competition affect the profitability of an industry.[4]

   i)   Threat of entry
   ii)   Pressure from substitute products
   iii) Bargaining power of buyers
   iv)   Bargaining power of suppliers

SECTION D   [30]

1. The financial statements of Black Barn Company are given below.
   Calculate the following ratios:
   [10]

Black Barn Company		
Income Statement (2007)		
Sales	$8,000,000	
Cost of goods sold	5,260,000	
Gross profit	2,740,000	
Selling and administrative expenses	1,500,000	
Operating profit	1,240,000	
Interest expenses	140,000	
Income before tax	1,100,000	
Tax expense	440,000	
Net income	$660,000	
Balance Sheet		
	2007	**2006**
Cash	$200,000	$50,000
Accounts receivable	1,200,000	950,000
Inventory	1,840,000	1,500,000
Total current assets	3,240,000	2,500,000
Fixed assets	3,200,000	3,000,000
Total assets	$6,440,000	$5,500,000
Accounts payable	800,000	720,000
Bank loan	600,000	100,000
Total current liabilities	1,400,000	820,000
Bonds payable	900,000	1,000,000
Total liabilities	2,300,000	1,820,000
Common stock(130,000 shares)	300,000	300,000
Retained earnings	3,840,000	3,380,000
Total liabilities & equity	$6,440,000	$5,500,000
Note: The common shares are trading in the stock market for $40 each.		

i.	The firm's current ratio for 2007	(2)
ii.	The firm's times interest earned ratio for 2007	(2)
iii.	The firm's inventory turnover ratio for 2007	(2)
iv.	The firm's return on equity ratio for 2007	(2)
v.	The firm's P/E ratio for 2007	(2)

2. At time=0 you buy a call option on IBM for R8.70. The option gives you the right to buy 100 shares of IBM stock at time=T at R80.   [4]

i)   What is the profit/loss to you if S_T = R70?
ii)   What is the profit/loss for the writer if S_T = R70?
iii)   What is the profit/loss to you if S_T = R95?
iv)   What is the profit/loss for the writer if S_T = R95?

3. At time=0 you buy a put option on ITT stock for R7.00. The option gives you the right to sell 100 shares of ITT stock at time=T at R60.   [4]

i)   What is the profit/loss to you if S_T = R45?
ii)   What is the profit/loss to the put seller if S_T = R45?
iii)   What is the profit/loss to you if S_T = R65?
iv)   What is the profit/loss to the put seller if S_T = R65?

4. The risk free rate, average returns, standard deviations and beta's for three funds and the JSE500 Stock Index are given below.   [12]

Fund	Average	Std Deviation	Beta
A	15%	34%	1.05
B	20%	40%	1.3
JSE500 Stock Index	10%	20%	1
Risk free rate	5%		

i.   Compute the Jensen alpha for portfolios A, and B. Interpret your results.   (3)
ii.   Compute the Information Ratio for portfolios A, and B. Interpret your results. (3)
iii.   Compute the Treynold measure for portfolios A, and B. Interpret your results. (3)
iv.   Compute the M^2 measure for portfolios A, and B. Interpret your results. (3)