UNIVERSITY OF SWAZILAND

DEPARTMENT OF ACCOUNTING AND FINANCE

FIRST SEMESTER EXAMINATION PAPER

DECEMBER 2014

ACADEMIC YEAR 2014/2015

PROGRAMME OF STUDY	**:**	**Bachelor of Commerce**
YEAR OF STUDY	**:**	**Year 3 (Full Time)**
TITLE OF THE PAPER	**:**	**Investment Analysis and Portfolio Management**
COURSE CODE	**:**	**AC 321 (M)**
TIME ALLOWED	**:**	**Three (3) Hours**
INSTRUCTIONS	**1**	**There are FOUR (4) questions, ANSWER ALL.**
	2	**Begin the solution to each question on a new page.**
	3	**The marks awarded for a question are indicated at the end of each question.**
	4	**Show your necessary workings.**

NOTE: **You are reminded that in assessing your work, account will be taken of accuracy of the language and the general quality of expression, together with layout and presentation of your answer.**

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR / SUPERVISOR.

SPECIAL REQUIREMENT: FINANCIAL CALCULATOR

QUESTION 1

(a) On January 1, Nonhlanhla Bhembe sold one April S&P 500 index futures contract at a futures price of E1,300. If the April futures price is E1,250 on February 1, what would be your profit if you close your position? (The contract multiplier is 250) **(2 marks)**

(b) The current level of the S&P 500 is E1,250. The dividend yield on the S&P 500 is 3%. The risk-free interest rate is 6%. What should be the futures price quote for a contract on the S&P 500 due to expire 6 months from now? **(2 marks)**

(c) A one year gold futures contract is selling for E641. Spot gold prices are E600 and the one year risk free rate is 6%. What is the arbitrage profit implied by these prices? **(2 marks)**

(d) Sihle Dikiza purchased an interest rate futures contract that has an initial margin requirement of 15% and a futures price of E115,098. The contract has a E100,000 underlying par value bond. If the futures price falls to E108,000, what percent loss on her money invested will she experience? **(2 marks)**

(e) A convertible bond has a par value of E1,000 but its current market price is E975. The current price of the issuing company's stock is E26 and the conversion ratio is 34 shares. What is the bond's market conversion value? **(2 marks)**

(f) Nonophile Dine has purchased a Treasury bond that will pay E10,000 to her newborn child in 15 years. If this bond is discounted at a rate of 3.875% per year, what is today's price (present value) for this bond? **(2 marks)**

(g) Ayanda Dlamini's parents plan to spend E20,000 on a car for him upon graduation from college. If he will graduate in three years and his parents can earn 4.125% annually on their investment, how much money must they set aside today for his car? **(2 marks)**

(h) Bongumenzi Dlamini intends to buy a vacation home in seven years and plans to have saved E50,000 for a down payment. How much money would he have to place today into an investment that earns 8% per year to have enough for his desired down payment? **(2 marks)**

(i) A coupon bond which pays interest of E60 annually, has a par value of E1,000, matures in 5 years, and is selling today at a E84.52 discount from par value. What is the approximate yield to maturity on this bond? **(2 marks)**

(j) A callable bond pays annual interest of E60, has a par value of E1,000, matures in 20 years but is callable in 10 years at a price of E1,100, and has a value today of E1,055.84. What is the yield to call on this bond? **(2 marks)**

(k) A coupon bond which pays interest semi-annually has a par value of E1,000, matures in 8 years, and has a yield to maturity of 6%. If the coupon rate is 7%, what is the intrinsic value of the bond today? **(2 marks)**

(l) Gcwalisile Dlamini purchased a 5-year annual interest coupon bond one year ago. Its coupon interest rate was 6% and its par value was E1,000. At the time she purchased the bond, the yield to maturity was 4%. If she sold the bond after receiving the first interest payment and the bond's yield to maturity had changed to 3%, what would have been her annual total rate of return on holding the bond for that year? **(3 marks)**

(Question 1 - Total marks : 25)

QUESTION 2

(a) Briefly describe the two major markets for the sale of stock. **(2 marks)**

(b) Part of the negotiation with the investment banker during the selection process has to do with how the investment banker will be compensated for taking the company public. Briefly describe these two standard compensation packages. **(3 marks)**

(c) Distinguish between a bull market and a bear market. **(2 marks)**

(d) Most companies do not have the resident expertise to complete an initial public offering (IPO), so they hire an investment banker to help accomplish the sale. Describe three significant tasks that an investment banker provides. **(3 marks)**

(e) A T-bill quote sheet has 90 day T-bill quotes with a 4.92 bid and a 4.86 ask. If the bill has a E10,000 face value an investor could buy this bill for how much? **(2 marks)**

(f) Mciniseli Dlamini buys a T-bill at a bank discount quote of 4.80 with 150 days to maturity. What is his actual annual rate of return on this investment? **(2 marks)**

(g) Explain the need for a firewall between underwriters and analysts. **(2 marks)**

(Question 2 - Total marks : 16)

QUESTION 3

(a) Finance functions in a two-parameter world of risk and return. Define risk and return in a financial sense and discuss how these two concepts are "joined at the hip." **(2 marks)**

(b) Find the variance for a security that has three one-year returns of 5%, 10%, and 15%.

(2 marks)

(c) Mduduzi Dlamini bought a share of stock for E47.50 that paid a dividend of E0.72 and sold one year later for E51.38. What was Mduduzi's dollar profit or loss and holding period return?

(2 marks)

(d) Ncobile Dlamini purchased Sethu Industries Inc. stock for E14.65 and sold it 6 months later for E17.38 after receiving a E0.25 dividend. What was Alice's holding period return (HPR), Annual Percentage Rate (APR), and Effective Annual Rate (EAR)? **(3 marks)**

(e) Njabuliso Dlamini is considering buying a share of stock in a firm that has the following two possible payoffs with the corresponding probability of occurring. The stock has a purchase price of E15.00. She forecasts that there is a 30% chance that the stock will sell for E30.00 at the end of one year. The alternative expectation is that there is a 70% chance that the stock will sell for E10.00 at the end of one year. What is the expected percentage return on this stock, and what is the return variance? **(3 marks)**

(f) Nompumelelo Dlamini is considering an investment in Chonta Inc. and has gathered the information in the following table. What is the expected standard deviation for a share of the firm's stock?

State of the Economy	Probability of the State	Conditional Expected Return Vandelay Inc.
Recession	.25	-20%
Steady	.60	10%
Boom	.15	35

(3 marks)

(g) Sihle Dlamini has two investment opportunities. She can invest in The Sunglasses Company or The Umbrella Company.

State of the Economy	Probability of the State	Expected Return Sunglasses Company	Expected Return Umbrella Company
Sunny	.50	25%	0%
Rainy	.50	0%	25%

(i) What is the expected return and standard deviation of each company? **(3 marks)**

(ii) If she diversifies her investment by putting 50% of her money into each company, what is the expected return and standard deviation of her portfolio? **(1 mark)**

(h) Define diversification. What are the benefits to diversification? **(2 marks)**

(i) For purposes of diversification, what type of correlation coefficient among asset returns is preferred by investors? Explain why. **(2 marks)**

(j) Define the terms systematic risk and unsystematic risk. Be sure to explain the difference between the two. Which type of risk can be diversified away? **(3 marks)**

(k) Thandeka Dlamini owns the following portfolio of securities. What is the beta for the portfolio?

Company	Beta	Percent of Portfolio
Apple	.82	50%
Ford	2.53	30%
Federal Express	1.67	20%

(2 marks)

(l) Assume the following information about the market and ThuxMasters' stock. ThuxMasters' beta = 1.50, the risk-free rate is 3.50%, the market risk premium is 10.0%. Using the SML, what is the expected return for ThuxMasters' stock? **(2 marks)**

(m) Both assets Nokwanda and Nokulinda plot on the SML. Asset Nokwanda has an expected return of 15% and a beta of 1.7. Asset Nokulinda has an expected return of 12% and a beta of 1.1.

(i) What is the slope of the security market line? **(2 marks)**

(ii) What is the risk-free rate of return? **(2 marks)**

(iii) What is the expected return on the market portfolio? **(2 marks)**

(n) Assume that both Stock Mandela and Stock Nonduduzo plot on the SML. Mandela has a beta of 2.6 and an expected return of 21.2%. Nonduduzo has a beta of 0.90 and an expected return of 9.3%. The expected return on the market portfolio is 10% and the risk-free rate is 3%. If you wish to hold a portfolio consisting of Mandela and Nonduduzo and have a portfolio beta equal to 1.5, what proportion of the portfolio must be in Mandela? What is the expected return on the portfolio?

	Mandela	Nonduduzo	Market Portfolio	Risk-free Asset
Beta	2.6	0.9	1.0	0.0
Expected Return	21.2%	9.3%	10.0%	3.0%

(4 marks)

(Question 3 - Total marks : 40)

QUESTION 4

Questions (a) – (c) are based on Table 14.1, use it to answer these questions:

(a) (i) Suppose Siphiwa Gama buys 50 January 30 call contracts, how much do these contracts cost him? **(3 marks)**

(ii) Suppose AAPL has risen to E50 per share, would he exercise the option? **(2 marks)**

(iii) Is the call option in the money or out of the money? **(2 marks)**

(iv) What is the value of his options? **(2 marks)**

(v) How much is his net profit/loss? **(2 marks)**

(b) Suppose Sithandile Gumedze wants the right to sell 100 shares of AAPL for E30 anytime up until the third Friday in July. How much will it cost her? **(2 marks)**

(c) (i) Suppose Kwanele Gwebu buys 10 AAPL January 32.50 put contracts. How much does this cost him (ignoring commissions)? **(2 marks)**

(ii) Just before the option expires, AAPL is selling for E22.50 per share. Is this good news or bad news? **(2 marks)**

(iii) What is his net profit? **(2 marks)**

(Question 4 - Total marks : 19)

End of Paper

TABLE

A Sample *Wall S*
Journal Option
Quotation

AppleC (*AAPL*)							Underlying stock price*: 30.69
		Call			Put		
Expiration	Strike	Last	Volume	Open Interest	Last	Volume	Open Interest
Oct	22.50	...	...	286	0.30	39	2790
Jan	22.50	...	...	3497	0.65	2	2031
Jun	25.00	5.90	30	1300	...	...	5101
Jul	25.00	5.90	208	9465	0.10	465	9484
Oct	25.00	6.60	27	1195	0.65	12	3218
Jan	25.00	7.10	103	18045	1.15	66	11359
Jun	27.50	3.21	68	10283	...	...	3618
Jul	27.50	3.80	167	17887	0.30	2787	9468
Oct	27.50	4.70	39	5104	1.25	10	3908
Jan	27.50	5.70	197	7478	1.80	10	3162
Jun	30.00	0.85	1549	7662	0.15	1406	2417
Jul	30.00	1.85	860	34929	1.05	2613	8318
Oct	30.00	3.30	367	8898	2.20	391	2023
Jan	30.00	4.00	391	31627	2.75	187	2032
Jun	32.50	0.05	2	2641	1.55	5	339
Jul	32.50	0.80	141	34663	2.35	335	1413
Oct	32.50	2.00	60	4502	3.40	10	344
Jan	32.50	2.90	5	4069	4.00	3	73
Jul	35.00	0.30	227	182	...	...	...
Oct	35.00	1.05	34	10717	5.00	20	451
Jan	35.00	1.85	100	10693	...	...	292

Underlying stock price represents listed exchange price only. It may not match the composite closing price.

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