UNIVERSITY OF SWAZILAND

DEPARTMENT OF ACCOUNTING AND FINANCE

FIRST SEMESTER EXAMINATION PAPER

DECEMBER 2012

ACADEMIC YEAR 2012/2013

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 – Full time
TIME ALLOWED	:	Three (3) Hours
TOTAL MARKS	:	100
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 all 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. An investor's portfolio is simply her collection of investment assets. Investors make **three** types of decisions in constructing their portfolios. Differentiate among asset allocation, security selection and security analysis. **(6 marks)**

b. Assume a 13% Swaziland Government security (par value E1000) with a redemption date of March 15 2029, was quoting a yield to maturity of 8% on March 16 2011. Swaziland Government Securities pay interest semi-annually. Determine the market price of the 13% Swaziland security on March 16 2011? **(2 marks)**

c. Thandeka Shongwe is considering the purchase of a E100 par value debenture with a 3 year maturity promising a 11% coupon. If he requires a YTM of 13% on debentures of equivalent risk and maturity, what does he believe is a fair market price? **(2 marks)**

d. Celimphilo Dlamini is considering investing in a bond currently selling for E878.51. The bond has four years to maturity, a E1,000 face value, and a 8% coupon rate. The next annual interest payment is due one year from today. The approximate discount factor for investments of similar risk is 10%. Calculate the intrinsic value of the bond. Based on this calculation, should Celimphilo purchase the bond? **(3 marks)**

e. In Figure 5-2 find the 5.625 May 08 Treasury bond.

(i) How much does it cost to buy the bond?
(ii) If you already owned the bond, how much would a bond dealer pay you for it?
(iii) By how much did the price change from the previous day?
(iv) What annual interest payment does the bond make?
(v) What is the bond's yield to maturity? **(5 marks)**

f. In Figure 2.2 find the bill that matured on September 9, 2004.

(i) At what price was the dealer willing to sell the bill?
(ii) At what price was the dealer willing to purchase the bill?
(iii) What is the bid-asked spread? **(3 marks)**

(Question 1 : Total marks 21)

FIGURE 5-2

asury Bonds, Notes and Bills February 15, 2005

anatory Notes

presentative Over-the-Counter quotation based on transactions of $1 million or more. Treasury bond, bill quotes are as of mid-afternoon. Colons in bid-and-asked quotes represent 32nds; 101:01 01 1/32. Net changes in 32nds. n-Treasury note. i-Inflation-Indexed issue. Treasury bill quotes in hs, quoted on terms of a rate of discount. Days to maturity calculated from settlement date. All e to maturity and based on the asked quote. Latest 13-week and 26-week bills are boldfaced. For ilable prior to maturity, yields are computed to the earliest call date for issues quoted above par e maturity date for issues below par. *When issued.

Speed/Cantor Fitzgerald

Treasury strips as of 3 p.m. Eastern time, also based on transactions of $1 million or more. Colons d-asked quotes represent 32nds; 99:01 means 99 1/32. Net changes in 32nds. Yields calculated ked-quotation. ci-stripped coupon interest. bp-Treasury bond, stripped principal. np-Treasury note, principal. For bonds callable prior to maturity, yields are computed to the earliest call date for issues bove par and to the maturity date for issues below par.

lear, Steams & Co. via Street Software Technology Inc.

MATURITY MO/YR	BID	ASKED	CHG	ASK YLD	RATE	MATURITY MO/YR	BID	ASKED	CHG	ASK YLD
nment Bonds & Notes					1.875	Jul 13i	103:06	103:07	-16	1.46
Feb 05n	100:00	100:00	1	1.49	4.250	Aug 13n	101:15	101:16	-6	4.04
Mar 05n	99:29	99:30	1	2.14	12.000	Aug 13	127:17	127:18	-6	3.55
May 07n	99:13	99:14	-1	3.38	2.375	Jan 25i	110:00	110:00	-34	1.78
Aug 07n	98:13	98:14	...	3.41	7.625	Feb 25	140:08	140:09	-20	4.54
Aug 07n	99:19	99:20	-1	3.41	6.875	Aug 25	130:24	130:25	-19	4.55
Aug 07n	106:13	106:14	-2	3.41	6.000	Feb 26	119:09	119:10	-18	4.56
Nov 07n	98:25	98:26	-1	3.46	6.750	Aug 26	129:27	129:28	-18	4.56
Jan 08i	108:06	108:07	-2	0.77	6.500	Nov 26	126:19	126:20	-18	4.56
Feb 08n	98:19	98:20	-1	3.48	6.625	Feb 27	128:14	128:15	-19	4.56
Feb 08n	105:22	105:23	-1	3.47	6.375	Aug 27	125:10	125:11	-19	4.56
Feb 08n	99:20	99:21	-1	3.49	6.125	Nov 27	122:00	122:01	-18	4.56
May 08n	97:08	97:09	-2	3.51	3.625	Apr 28i	135:09	135:10	-29	1.76
May 08n	106:12	106:13	-2	3.51	5.500	Aug 28	113:16	113:17	-17	4.56
Aug 08n	99:00	99:01	-2	3.54	5.250	Nov 28	110:00	110:00	-17	4.55
Sep 08n	98:17	98:18	-2	3.56	5.250	Feb 29	110:04	110:05	-18	4.55
Oct 08n	98:15	98:16	-2	3.56	3.875	Apr 29i	141:16	141:17	-36	1.76
Nov 08n	99:09	99:10	-1	3.57	6.125	Aug 29	123:04	123:05	-18	4.55
Nov 08n	104:04	104:05	-2	3.55	6.250	May 30	125:15	125:16	-19	4.54
Dec 08n	99:08	99:09	-2	3.58	5.375	Feb 31	113:21	113:22	-19	4.48
Jan 09n	98:25	98:26	-2	3.58	3.375	Apr 32i	137:07	137:08	-32	1.66

FIGURE 2.2

Treasury Bills

MATURITY	DAYS TO MAT	BID	ASKED	CHG	ASK YLD
Jun 17 04	7	0.95	0.94	...	0.95
Jun 24 04	14	0.93	0.92	0.01	0.93
Jul 01 04	21	0.94	0.93	-0.01	0.94
Jul 08 04	28	1.01	1.00	...	1.01
Jul 15 04	35	1.01	1.00	-0.01	1.01
Jul 22 04	42	1.05	1.04	...	1.06
Jul 29 04	49	1.08	1.07	0.01	1.09
Aug 05 04	56	1.10	1.09	-0.01	1.11
Aug 12 04	63	1.13	1.12	...	1.14
Aug 19 04	70	1.16	1.15	0.01	1.17
Aug 26 04	77	1.17	1.16	...	1.18
Sep 02 04	84	1.20	1.19	-0.01	1.21
Sep 09 04	91	1.25	1.24	...	1.26
Sep 16 04	98	1.26	1.25	...	1.27
Sep 23 04	105	1.27	1.26	...	1.28
Sep 30 04	112	1.28	1.27	...	1.29
Oct 07 04	119	1.32	1.31	0.02	1.33
Oct 14 04	126	1.33	1.32	0.03	1.34
Oct 21 04	133	1.39	1.38	0.03	1.41
Oct 28 04	140	1.40	1.39	0.02	1.42
Nov 04 04	147	1.44	1.43	0.04	1.46
Nov 12 04	155	1.47	1.46	0.03	1.49
Nov 18 04	161	1.51	1.50	0.04	1.53
Nov 26 04	169	1.52	1.51	0.04	1.54
Dec 02 04	175	1.54	1.53	0.04	1.56
Dec 09 04	182	1.58	1.57	0.05	1.60

QUESTION 2

a. Distinguish between a call option and a put option. **(4 marks)**

Questions b – c are based on Figure 2.12, look at it to answer these questions:

Fig. 2-12

IBM (IBM) — Underlying stock price: 88.64

		Call			Put		
Expiration	Strike	Last	Volume	Open Interest	Last	Volume	Open Interest
Jun 2004	85.00	3.82	236	5150	0.15	5500	10472
Jul 2004	85.00	4.50	109	5377	0.90	248	16627
Oct 2004	85.00	6.20	40	1559	2.60	208	9594
Jan 2005	85.00	...	...	4227	4.00	414	5229
Jun 2004	90.00	0.40	6812	23008	1.80	1265	10295
Jul 2004	90.00	1.55	1597	19197	2.80	203	14295
Oct 2004	90.00	3.50	1258	6447	4.80	10	7402
Jan 2005	90.00	5.10	446	9807	6.20	10	16533
Jun 2004	95.00	0.05	44	10006	6.30	473	1540
Jul 2004	95.00	0.35	476	22474	6.80	103	20767
Oct 2004	95.00	1.70	266	9410	...	...	3554
Jan 2005	95.00	3.00	97	5393	9.00	235	7917

b. (i) What would be the profit or loss per share of stock to an investor who bought the October 2004 expiration IBM call option with exercise price of $90, if the stock price at the expiration of the option is $94? **(2 marks)**
(ii) What about a purchaser of the put option with the same exercise price and expiration? **(2 marks)**

c. i) Suppose you buy 30 January 95 call contracts, how much do these contracts cost you? **(2 marks)**
ii) Suppose IBM had fallen to $89 per share, would you 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 your options? **(2 marks)**
v) How much is your net profit/loss? **(2 marks)**

d. What is buying on margin? **(3 marks)**

e. Siphesihle Mndzebele is bullish on SRRC stock, which is selling for E120 per share. He has E15,000 to invest and expects RSSC to go up in price by 25% during the next year. Assume Siphesihle borrows another E15,000 from a broker and invests it in RSSC too. Assuming an interest rate on the margin loan of 10% per year, what will Siphesihle's rate of return be now (ignoring dividends) if RSSC stock goes up 25% by year's end? If it goes down by 25%? If it remains unchanged? **(12 marks)**

(Question 2 : Total marks 33)

QUESTION 3

Consider the following scenario analysis for calculating measures of prospective portfolio performance. There are two assets and three states of the economy:

State of Economy	Probability of State of Economy	Rate of Return if State occurs on Stock A	Rate of Return if State occurs on Stock B
Recession	0.20	-.15	.20
Normal economy	0.50	.20	.30
Boom	0.30	.60	.40

a. What are the expected returns and standard deviations for these two stocks? **(10 marks)**

b. Suppose you have E20,000 total. If you put E15,000 in Stock A and the remainder in Stock B, what will be the expected return and standard deviation of your portfolio? **(5 marks)**

c. A stock has a beta of 1.3, the expected return on the market is 14 percent, and the risk-free rate is 5 percent. What must the expected return on this stock be? **(2 marks)**

d. A stock has an expected return of 14 percent, the risk-free rate is 4 percent, and the market risk premium is 6 percent. What must the beta of this stock be? **(2 marks)**

e. A stock has an expected return of 11 percent, its beta is .85, and the risk-free rate is 5.5 percent. What must the expected return on the market be? **(2 marks)**

f. A stock has an expected return of 17 percent, a beta of 1.9, and the expected return on the market is 11 percent. What must be the risk-free rate be? **(2 marks)**

g. You own a stock portfolio invested 25 percent in Stock Q, 20 percent in Stock R, 15 percent in Stock S, and 40 percent in Stock T. The betas for these four stocks are .6, 1.70, 1.15 and 1.34, respectively. What is the portfolio beta? **(2 marks)**

(Question 3 : Total marks 25)

QUESTION 4

a. An individual investor choosing a mutual fund should consider not only the fund's stated investment policy and past performance, but also its management fees and other expenses. Distinguish among front-end load, back-end load and operating expenses. **(6 marks)**

b. The Maziya Equity Fund sells Class A shares with a front-end load of 4% and Class B shares with 12b-1 fees of .5% annually as well as back-end load fees that start at 5% and fall by 1% for each full year the investor holds the portfolio (until the fifth year). Assume the portfolio rate of return net of operating expenses is 10% annually. What will be the value of a E10,000 investment in Class A and Class B if the shares are sold after (i) 1 year , (ii) 4 years, (iii) 10 years? **(12 marks)**

(iv) Which fee structure provides higher net proceeds at the end of each investment horizon? **(3 marks)**

(Question 4 : Total marks 21)

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