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University Examinations 2011/2012

THIRD YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF COMMERCE

HBC 2223: PORTFOLIO & INVESTMENT ANALYSIS

DATE: DECEMBER 2011 **TIME: 2 HOURS**

INSTRUCTIONS: Answer all questions

QUESTION ONE (25 MARKS)

a) What are the limitations of Harry Makowitz models of portfolio analysis (5 Marks)

b) The returns of three assets under four possible state of nature are given below

State of nature	Probability	Return on Asset 1	Return on Asset 2	Return on Asset 3
1	0.10	16%	10%	0%
2	0.30	12%	12%	10%
3	0.50	4%	-8%	18%
4	0.10	-6%	7%	-2%

Required:

(i) Calculate the portfolio return (4 Marks)

(ii) Calculate the risk(standard deviation) if the project (assume proportion of investment to be 50%, 30% and 20% respective for Asset 1, Asset 2 and Asset 3 respectively. (10 Marks)

c) By use of a diagram, explain the concept of efficient frontiers (6 Marks)

QUESTION TWO(15 MARKS)

a) What are the limitations of capital asset pricing model (CAPM) (4 Marks)

b) The rate of returns on stock A and market portfolio for is periods are given below.

Period	Return of stock A(%)	Return of Market portfolio (%)	period	Return on stock A%	Return on Market portfolio (%)
1	10	12	8	4	7
2	15	14	9	-9	1
3	18	13	10	14	12
4	14	10	11	15	-11
5	16	9	12	14	16
6	16	13	13	6	8
7	18	14	14	7	7
			15	-8	10

Required:

(i) What is the beta for stock A (6 Marks)

(ii) What is the characteristic line for Stock A (5 Marks)

QUESTION THREE (15 MARKS)

a) What are the implication of efficient market hypothesis (EMH) for investment analysis (5 Marks)

b) Distinguish between the three forms of market efficiency (6 Marks)

c) Discuss the calendar anomalies (4Marks)

d) Explain the following empirical tests on the weak form market efficient
   - (i) Filter rules test (1 Mark)
   - (ii) Runs test (1 Mark)
   - (iii) Serial correlation tests (1 Mark)

QUESTION FOUR (12 MARKS)

a) Explain the following terms as used in option trading.
   - (i) European option
   - (ii) Straddle
   - (iii) Strangle
   - (iv) "In-the-money" (6 Marks)

b) Davy is interested in buying a European call option on McDonald's Inc, a non dividend paying common stock with a strike price of $20 and three months until expiration. McDonald's stock is currently trading at $20 per share and the annual variance of its continuously compounded returns is 16%.

The treasury bills that mature in three months yield continuously compounded interest rate of 12% p.a.

(i) Use Black Scholes model to calculate the price of the call option that Davy is interested in buying. (4 Marks)

(ii) What assumptions did you make in the application of the model in (i) above? (2 Marks)