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University Examinations 2012/2013

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

BACHELOR OF COMMERCE

HBC 2223 – PORTFOLIO AND INVESTMENT ANALYSIS

DATE: DECEMBER 2012 **TIME: 2 HOURS**

INSTRUCTIONS: Answer question **ONE** and any other **TWO** questions.

QUESTION ONE – 30 MARKS

(a) Outline six assumptions about investor behaviour in the investment framework developed by Harry Markowitz. (6Marks)

(b) After thorough analysis of both the aggregate stock market and the stock of XYZ Company, you develop the following opinion.

Likely Returns (%)

Economic Conditions	**Aggregate Market**	**XYZ**	**Probability**
Good	16	20	0.4
Fair	12	13	0.4
Poor	3	-5	0.2

At present, the Treasury bill yield is 7%.

Required:

(i) Calculate the covariance between the aggregate market and XYZ stock. (15 Marks)

(ii) With support of clear working, would you consider it wise to invest in XYZ stock? (5 Marks)

(c) Outline the essential characteristics of investments. (10Marks)

(d) Use examples to explain the distinction between systematic and unsystematic risk. (4Marks)

QUESTION TWO – 20 MARKS

(a) Suppose a factor model is appropriate to describe the returns on CMC stock. Information about those factors is presented in the chart below:

Factor	Beta	Expected value (%)	Actual value (%)
GNP	1.95	6.0	6.5
Inflation	0.85	5.0	5.75
Interest rates	1.2	7.0	8.0
Stock market	2.5	9.5	11.5
Industry production	2.2	9.0	10.0

(a) The risk free rate anticipated on CMC's share is 9%. What is the expected return on the share under Arbitrage Pricing Theory? (4Marks)

(b) Although the semi-strong form of efficient market hypothesis has research support, there are deviations from the basic proposition. Explain four of such deviations. (8Marks)

(c) A portfolio consists of three securities P_1, P_2 and P_3 with the following parameters:

	P_1	P_2	P_3	Correlation
Expected Return (%)	25	22	20	
Variance (%)	900	676	576	

Correlation:

P_1P_2	-0.5
P_2 P_3	+0.4
P_1 P_3	+0.6

If the securities are equally weighted, how much is the risk and return of the portfolio of these three securities. (8Marks)

QUESTION THREE – 20 MARKS

(a) Explain what a warrant is and state four reasons why firms issue warrants. (5Marks)

(b) Sembi Motors Corporation has Shs. 1000 face value convertible bond outstanding that has a market value of shs. 1,030. It has a coupon rate of 6% and matures in 5 years. The conversion price is shs. 50. The common stock is currently selling for Sh. 44.

(i) What is the conversion premium (in %)? (2Marks)

(ii) At what price does the common stock need to sell for the conversion value to be equal to the current bond price? (3Marks)

(c) Explain the mechanism of trading in future markets. (10Marks)

QUESTION FOUR – 20 MARKS

(a) An article in a financial publication observes, "The higher the expected volatility in the stock prices, the higher the prices of put and call options will be" Briefly explain the reasoning behind this observation. (5Marks)

(b) An investor is interested in buying a put option on ABC Ltd, a non-dividend paying common stock with a strike price of shs. 20 and three months until expiration. ABC's stock is currently trading at shs. 20 per share and the annual variance of its continuously compounded returns is 16%

The Treasury bill that matures in 3 months yield 12% p.a. Apply put-call-parity relationship to calculate the price of the put options that the investor is interested in buying. (10Marks)

(c) Explain the practical application of options. (5Marks)