



MERU UNIVERSITY COLLEGE OF SCIENCE & TECHNOLOGY

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University Examinations 2011/2012

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

HBC2223: FORTFOLIO AND INVESTMENT ANALYSIS

DATE: APRIL 2012

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a. Using relevant examples distinguish between systematic and unsystematic
(4 Marks)
- b. The following are returns of the securities A ,B and C and the returns on the market portfolio (m)
- | | | | | | |
|-------------|------|------|------|------|-------|
| Probability | 0.1 | 0.2 | 0.4 | 0.2 | 0.1 |
| Returns (%) | | | | | |
| A | 6.0 | 8.0 | 10.0 | 12.0 | 4.0 |
| B | 14.0 | 12.0 | 10.0 | 8.0 | 6.0 |
| C | 32.0 | 20.0 | 14.0 | -5.0 | -10.0 |
| N | 39 | 17 | 6 | -12 | -16 |

An investor has sh. 1,000,000. He invests 30 percent of the amount in security A and allocates the remainder equal to B and C. Calculate:

- The variance of a portfolio made up of asset A, B and C (12 Marks)
- The sensitivity of returns of asset C to that of the market portfolio (4 Marks)
- The characteristic line for security C (3 Marks)
- Explain the mechanism of optimal asset combination using risk return trade off curve (opportunity set) (7 Marks)

QUESTION TWO (20 MARKS)

- (i) Explain the differences between future and forward contract (6 Marks)
(ii) ABC company Ltd intends to invest in sh.100, 000 7% 5 year convertible debenture. The debenture Carries a conversion price of sh. 1000. The company

requires a rate of return of 8%. Calculate the theoretical value of the convertible debenture if the price for the share is sh. 1,100 at the expected date of conversion (3 Marks)

- b. (i) explain the basic tenets of the efficient market theory (2 Marks)
(ii) Explain three forms of capital market efficiency and clearly describe at least one test for each version (9 Marks)

QUESTION THREE (20 MARKS)

- a. What fundamental assumption underlie the application of CAPM? (6 Marks)
b. Empirical evidence out of studies on capital markets in developing economies indicate that securities returns depend entirely on three factors-inflation gross domestic product (GDP) and interest rates on a particular securities market, they require rate of return on a portfolio with unit sensitivity to inflation and zero sensitivity to GDP and zero sensitivity to other factors is 12 per cent and the required rate of return on a portfolio with unit sensitivity to interest rates and zero sensitivity to other factors is 8 percent a share of APC Ltd listed on the capital market has a beta of 1.2 with changes in GDP, beta of 0.85 against changes in inflation and a beta of 0.7 rate of return on the market is 15% and APC Ltd stock has a beta of 1.1 to changes in the market risk.

Required:

Compute the required rate of return on APC stock using

- i. CAPM
ii. APM (6 Marks)
c. Research has shown patterns of returns that seem to contradict the EMH, commonly known as market anomalies. Discuss any four (8 Marks)

QUESTION FOUR (20 MARKS)

- a. Explain the following terms used in options trading:
i. In –the-money
ii. European call option
iii. Saddles
iv. Strike price (8 Marks)
b. A stock is currently priced at sh.70 the stock will never pay a dividend compounded continuously and the standard deviation of the stocks return is 60% a European call option on the stock has a strike price of sh.80 and no expiration date.
i. Based on black scholes model, what is the value of the call option? (6 Marks)
ii. What assumptions did you make I the application of the model in (i) above? (4 Marks)

iii. Explain the impact of lengthening the time to expiration on an option

(2 Marks)