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UNIVERSITY EXAMINATIONS 2023/2024

FOURTH YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN FINANCE

BFS 3300: INVESTMENT ANALYSIS II

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other TWO questions.

QUESTION ONE (30 MARKS)

- a) Discuss the main characteristics of fixed income securities (10 Marks)
- b) Suppose we have to ask to analyze two portfolios having the following characteristics.

Portfolio	Observed R	Beta	Residual Variance
1	0.18	1.8	0.04
2	0.12	0.7	0.00

Additional information:

- The return on the market portfolio is 0.14.
- The risk free rate is 0.07
- The standard deviation of the market portfolio is 0.02.

Compute

- a) The Jensen Index for portfolios 1 and 2.
- b) The Treynor Index for portfolios 1 and 2 and the market portfolio.



- c) The sharp Index for portfolios 1 and 2 and the market portfolio. (14 Marks)
- d) Discuss the main weaknesses of modern portfolio theory (6 Marks)

QUESTION TWO (20 MARKS)

- a) Discuss the main risks that Fixed income securities investments are exposed to. (10 Marks)
- b) Mr Akili Mingi holds the following portfolio of four risky assets and a deposit in a risk free asset. The table below shows the respective portfolio weightings and the current returns on the assets to ether with their beta coefficients

Asset	Weighting(%)	Current returns (%)	Beta coefficient
A	20	12	1.5
B	10	18	2.0
C	15	14	1.2
D	25	8	0.9
Risk free asset	30	5	0.0

The overall return on the market portfolio of risky assets is 11 % and this is expected to continue for the foreseeable future.

Required:

- i. The portfolio current return and the portfolio beta.
- ii. Determine the assets which are inefficient, efficient or super-efficient.
- iii. In view of your answer in (ii) above, predict how the future asset values and, hence, their rates of return would behave as the market moves towards full equilibrium.

(10 Marks)

QUESTION THREE (20 MARKS)

Kiangoma timber ltd. is considering three possible capital projects for next year. Each project has a one year life, and project returns depend on next years state of the economy. The estimated rates of return are shown below.



STATE OF THE ECONOMY	PROBABILITY OF OCCURRENCE	RATE OF RETURN		
		A	B	C
Recession	0.25	10 %	9%	14%
Average	0.50	14	13	12
BOOM	0.25	16	18	10

REQUIRED:

- a) Find each project expected rate of return and standard deviation.
- b) Compute the correlation coefficient between
 - i. A and B
 - ii. A and C
 - iii. B and C
- c) Compute the standard deviation of the portfolio. (15 Marks)
- d) ABC Ltd has issued a 5 year zero coupon rate bond with maturity value of Sh.100,000. The bond is issued at a discount of 32%. Determine the rate of return of the bond. (5 Marks)

QUESTION FOUR (20 MARKS)

- a) Discuss the major theories which explain the term structure of interest rates. (10 Marks)
- b) Real Options are available to finance managers when making capital budgeting decision. Discuss the different types of real options (10 Marks)

QUESTION FIVE (20 MARKS)

- a) Discuss the main assumptions of the Black and Scholes model of option valuation (10 Marks)
- b) Wagwan company ltd is considering a new project which requires an outlay of sh.10 million and has an expected net present value of sh.2 million. However, the economic climate over the next few years is thought to be very risky and the volatility attaching to the net present value of the project is 20%. Wagwan is able to delay commencing the project for three years. The risk free rate of interest is 6% p.a.

Estimate the value of the option to delay the start of the project for three years, using the Black Scholes option pricing model. (10 Marks)

