



**MASINDE MULIRO UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

UNIVERSITY EXAMINATIONS

2021 / 2022 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER

MAIN EXAMINATION

**FOR THE DEGREE OF MASTERS IN BUSINESS
ADMINISTRATION**

COURSE CODE: FINANCIAL ECONOMICS

COURSE TITLE: MBA 831

DATE: TEUSDAY, 26TH JULY 2022

TIME: 2-5 PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER THREE (3) QUESTIONS

TIME: 3 HOURS

MMUST observes ZERO tolerance to examination cheating

QUESTION ONE

- a. If the one-year spot rate is 7 percent and the two-year spot rate is 8.5 percent, what is the one-year forward rate over the second year? (6 Marks)
- b. When the non-dividend paying stock price is Sh 20, the strike price is Sh20, the risk-free rate is 6%, the volatility is 20% and the time to maturity is 3 months. What is the price of a European call option on the stock (6 Marks)
- c. For an efficient portfolio j , R_j represents the return on the portfolio with $E(R_j) = 30\%$, while the risk-free rate is $R_f = 7\%$, the expected return on the market portfolio is $E(R_m) = 15\%$, and the standard deviation of returns on the market portfolio is $\sigma_m = 25\%$. Find the beta and σ_j of portfolio j , as well as its correlation coefficient with the market portfolio (6 Marks)
- d. State and explain the assumptions of the state preference theory. Which of these assumptions are likely to be invalid in the real world? (6 Marks)
- e. Explain three main uses of financial derivatives (6 Marks)

QUESTION TWO

- a. Let R_1 and R_2 be the returns for two securities with $E(R_1) = 0.01$, $E(R_2) = 0.1$, $VAR(R_1) = 0.03$, $VAR(R_2) = 0.07$, $COV(R_1, R_2) = -0.04$. Find the composition of the two securities in a portfolio which minimizes risk. Calculate the risk and expected return of this portfolio (8 Marks)
- b. Explain the following behavioral economics concepts
 - i. Gamblers fallacy (3 Marks)
 - ii. Mental accounting (3 Marks)
 - iii. Prospect theory (3 Marks)
 - iv. Confirmation bias (3 Marks)

QUESTION THREE

- a. BB can borrow in the USA at 10% while AA has to pay 11% to borrow in the USA. AA can borrow in Australia at 8%, while BB has to pay 9% to borrow in Australia. BB will be doing business in Australia and need Australian dollar. While AA will be doing business in USA and need USD. The exchange rate is 1.5 AUD/USD. AA needs \$1

million and BB needs AUD 2 million. They decide to borrow the funds locally and swap the borrowed funds charging each other the rate the other party would have paid had they borrowed in foreign market. The swap period is 5 years. Calculate the cash flow for this swap. (12 Marks)

- b. Explain four properties of capital asset pricing model (CAPM) (8 Marks)

QUESTION FOUR

- a. A financial analyst has modeled the stock of the company using a Fama-French three-factor model. The risk-free rate is 5%; the market return is 10%; the return on the SMB portfolio (r_{SMB}) is 3.8%; and the return on the HML portfolio (r_{HML}) is 4.7%. If $\beta_i = 0$, $b_i = 1.2$, $c_i = -0.4$, and $d_i = 1.3$, what is the stock's predicted return? (8 Marks)
- b. Explain the concept of price formation and discovery as used in market microstructure theory (6 Marks)
- c. Illustrate the argument of the loanable funds theory (6 Marks)

QUESTION FIVE

Explain meaning of the following terms as used in financial economics

- a. Characteristic line (4 Marks)
- b. Fishers separation theorem (4 Marks)
- c. Pure securities (4 Marks)
- d. Stochastic dominance (4 Marks)
- e. Moral hazard (4 Marks)