



MAASAI MARA UNIVERSITY
REGULAR UNIVERSITY EXAMINATIONS
2022/2023

SCHOOL OF BUSINESS AND ECONOMICS
BACHELOR'S OF SCIENCE IN FINANCIAL
ECONOMICS

THIRD YEAR SECOND SEMESTER

COURSE CODE: ECF 3203-1

COURSE TITLE: ASSET PRICING

DATE:

TIME:

INSTRUCTIONS:

Attempt Question One and any other Two Questions

QUESTION ONE [20 MARKS]

- a) Define the following terms in relation to asset pricing
- i. Arbitrage. **(1 Mark)**
 - ii. Financial asset. **(1 Mark)**
 - iii. Efficient market. **(1 Mark)**
 - iv. Complete market. **(1 Mark)**
- b) Explain why the term to maturity of a bond is important with respect to bond valuation. **(3 Marks)**
- c) A fixed interest stock with a coupon of 8% per annum payable half yearly in arrears is redeemable after 15 years from the date of issue. What price should an investor subject to tax at 25% on income, who wishes to obtain a net yield of at least 7% per annum, pay for shs.100 nominal of this stock? **(4 Marks)**
- d) Assume the Capital Asset Pricing Model holds. You are given the following information about stock X and the market:
- The annual effective risk-free rate is 4%.
 - The market's expected return is 0.08 and the market's volatility is 0.25.
 - The expected return of stock X is 6% and its volatility is 0.4.
 - The correlation between the returns of stock X and the market is 0.2.
- Should the investor invest in stock X? **(5 marks)**
- e) Some bonds have a call provision whereas others have a put provision that can be exercised prior to maturity. Explain the difference between the two provisions? **(4 marks)**

QUESTION TWO [15 MARKS]

- a) Suppose the return on short-term government bonds (perceived to be risk-free) is 6%. The expected rate of return required by the market for a portfolio with a beta measure of one is 15%. According to the CAPM,
- i) What is the expected rate of return on the market portfolio? **(2 marks)**
 - ii) Suppose you consider buying a share at \$40. The stock is expected to pay \$3 in dividends next year and to then sell for \$41. The stock risk has been evaluated by $\beta=0.5$. Is the stock overpriced or under-priced? **(4 marks)**
- b) Explain the three roles of financial markets **(6 Marks)**

- c) Identify the difference in the risk measures used in the capital market line(CML) and the security market line (SML) **(3 marks)**

QUESTION THREE [15 MARKS]

- a) State and briefly explain at least four risks associated with investing in bonds. **(8 marks)**
- b) Discuss the following statement:
“A portfolio with a beta of zero is equivalent to a risk-free asset.” **(4 marks)**
- c) Outline three features of a bond **(3 marks)**

QUESTION FOUR [15 MARKS]

- a) Consider the following statements. Are they TRUE or FALSE? Provide a brief explanation of your answer
- i) An increase in a stock’s variance reduces the value of options written on that stock **(2marks)**
 - ii) According to the CAPM, everyone should hold the same portfolio. **(2 marks)**
 - iii) There is no benefit to diversification if asset returns are uncorrelated. **(2 marks)**
 - iv) If markets are complete, then everyone has the same utility. **(2 marks)**
- b) The annual returns R_p on a portfolio can be assumed to conform to the single-index model of asset returns.
- i) Write down an equation defining this model and show that:
$$var (R_p) = \beta_p^2 var (R_M) + var (\epsilon_p)$$
 (5 marks)
 - ii) Explain why the specific risk $var (\epsilon_p)$ is sometimes referred to as the “diversifiable risk”. **(2 marks)**