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MAIN EXAMINATION

MAY – AUGUST 2021

FACULTY OF ARTS AND SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

REGULAR PROGRAMME

ECN 306: FINANCIAL ECONOMICS

Date: AUGUST 2021	Duration: 2 Hours
INSTRUCTIONS: Answer Question ONE and any other TWO Questions	

Q1.

a) A portfolio consists of two assets, the expected returns and standard deviations of returns of which are listed in the table below

	Asset 1	Asset 2
Expected Rate of Return	8%	10%
Standard Deviation	16%	20%

You are required to compute:

(i) The expected return for a portfolio which is equally weighted between the two assets **(2 marks)**

(ii) The correlation coefficient for the two-asset portfolio, assuming that the covariance is 32 **(2 marks)**

(iii) The variance of returns for the equally weighted portfolio, assuming a covariance of 32 **(2 marks)**

(iv) The standard deviation of returns for the equally weighted portfolio (**2 marks**)

(v) The simple weighted standard deviation of the portfolio and comment on the scale of risk reduction (**4 marks**)

b) A small community wants to establish a sinking fund to pay off debts of 20 million. The community can earn interest at the rate of 8% per year compounded quarterly. The debt comes due in 7 years. If the first deposit is made 3 months from now, what quarterly deposits will be required to realize 20 million? How much interest will be earned?

(**6 marks**)

c) Explain the three goals of a financial manager within the context of corporate finance (**6 marks**)

d) Explain the two essential functions performed by secondary markets (**6 marks)**

Q2.

a) Discuss six assumptions associated with the Capital Asset Pricing Model (CAPM) (**12 marks**)

b) Explain the four criticism of the Modigliani and Miller Hypothesis (**8 marks**)

Q3.

a) Biashara Limited has established two hotels under different company names Coastal Beach Hotel Limited and Bahari Beach Hotel Limited. Coastal Beach Hotel Limited is unlevered company while Bahari Beach Hotel Limited has a debt of Ksh 2 million carrying an interest rate of 9.5. Both hotels are generating an operating income of Ksh 200,000 per month. The stockholders of both hotels have a return on equity (ROE) of 10 percent.

(i) State and proof the Modigliani and Miller proposition 1 for the two companies (**10 marks)**

(ii) Discuss the important assumptions that are necessary for the above proposition to hold true **(6 marks)**

b) Differentiate between systematic risk and unsystematic risk. Provide examples as necessary. (**4 marks)**

Q4.

a) The social value of financial intermediation can be assessed in terms of its direct relevance to an average person in the process of provision of financial services. Define financial intermediation and discuss its value to an individual (**10 marks)**

b) Rodgers Masengo just closed a Ksh. 2,000,000 business loan that is to be repaid in 3 equal end-of year repayments. The interest rate on the loan is 13%. Prepare an amortization schedule for the loan. (**10 marks)**

Q5.

a) Discuss the following concepts as used in financial economics

(i) Beta of a security (**2 marks**)

(ii) Contingent claims (**2 marks**)

(iii) Exercise/ strike price (**2 marks**)

(iv) Futures contract (**2 marks**)

(v) Commercial Paper (**2 marks**)

b) Assume that security returns are generated by the single-index model,

$$R_i = \alpha_i + \beta_i R_M + e_i$$

Where R_i is the excess return for security *i* and R_M is the market's excess return.

The risk-free rate is 2%. Suppose also that there are three securities, *A, B,* and *C,* characterized by the following data:

Security	β_i	$E(R)_i$	$\sigma(e¿¿i)¿$
A	0.8	10%	25%
B	1.0	12	10
C	1.2	14	20

(i) If σ_M is 20%, calculate the variance of returns of securities *A, B,* and *C.* **(3 marks)**

(ii) Now assume that there are an infinite number of assets with return characteristics identical to those of *A, B,* and *C,* respectively. If one forms a well-diversified portfolio of type *A* securities, what will be the mean and variance of the portfolio's excess returns? What about portfolios composed only of type *B* or *C* stocks? **(5 marks)**

(iii) Is there an arbitrage opportunity in this market? **(2 marks)**

END