UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: DEGREE IN AGRICULTURE (AEM OPTION) V

COURSE CODE: AEM 509

TITLE OF PAPER: AGRICULTURAL FINANCE

TIME ALLOWED: TWO (2) HOURS

INSTRUCTION: ANSWER ALL THREE (3) QUESTIONS

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QUESTION ONE

a. How should a capital budget analyst go about forecasting the future cash returns from a prospective investment in capital equipment?

(10 Marks)

b. After graduating from school this year, you would like to be a successful commercial farmer. This has been your main aim of coming to the university to study agricultural science. Recently, a farmer from Malkerns advertised the sale of his farm in the Swazi Times . This seems to interest you. Assume that the farmer's farm is 50 ha with young fruit trees that will reach full maturity in five years time. It is estimated that until the trees fully mature the revenue will just cover the expenses, but thereafter the net income will be E200 per ha for years 6 through 25. The property will be worth an estimated E15000 per ha 25 years from now. Since you don't have money to purchase the farm, you went to the bank with your parents to request for a loan to enable you purchase the farm. The manager you met was so kind and willing to help. All what he wanted to know from you is how much do you think should be paid for the property if you anticipated an 8% investment return. What answer would you provide? Explain.

(20 Marks)

c. In a bid to encourage agricultural graduates to take farming as a business, the government of Swaziland has introduced a policy that ensures the leasing-out of dairy cows owned by the ministry of agriculture to prospective farmers. Discuss the possible advantages and disadvantages of this policy and also the conditions under which ownership of the cows is likely to be less expensive than leasing.

(10 Marks)

QUESTION TWO

a. Most investment decisions involve a large element of uncertainty about the future, and they are taken in the expectation of returns that might not materialize fully, or that might result in losses. The investor's dilemma is how to maximize returns from investments and at the same time minimize the associated risk. To achieve this, the first step that most investors take is to reduce risk by holding a diversified portfolio. Explain what this means to you and its advantages to the investor.

(10 Marks)

b. A livestock producer can allocate a limited amount of housing and feed storage space to two enterprises, C and D. Based on the data from past experience, the following statistical information on returns above fixed costs per 100 square metre of space has been collected:

	Enterprise C	Enterprise D
Mean annual return/100 m^2 space (E)	E200	E100
Variance (V$^{2)}$	8100	625
Standard deviation (V)	90	25
Correlation coefficient (r$_{C,D}$)	0.05	

a. Which enterprise would be selected if the decision is based on the coefficient of variation?

(5 Marks)

b. Which enterprise would be selected by a manager seeking the highest lower bound?

(5 Marks)

c. Assume that the housing and feed storage space can be allocated to any combination of the two livestock enterprises. Calculate the expected returns, standard deviation, coefficient of variation, and lower bound for the following allocations of space to enterprises C and D:

(5 Marks)

75% to C, 25% to D
50% to C, 50% to D
25% to C, 75% to D

d. Based on your answer to parts a, b, and c, how would the limited space be allocated to enterprises C and D based on the coefficient of variation and the maximum lower bound respectively?

(5 Marks)

QUESTION THREE

b. Define and illustrate the principle of increasing risk, using a hypothetical example and discuss the impacts of leverage on owner equity with an equal percentage gain and loss on total capital used in the business.

(15 Marks)

b. It is well known that additional leverage would increase the rate of firm growth yet, internal and external capital rationing limit the use of financial leverage to generally accepted levels. Comment on this.

(15 Marks)