



"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES

AEC 301 Farm Management and Farm Planning

END OF SECOND SEMESTER EXAMINATIONS

Nov 2020

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INSTRUCTIONS

This exam has three questions. Choose ONE of the questions, then answer ALL parts of the question that you choose.

NAEC 401
Farm Management and
Planning

FINAL EXAM 2020

It is important that you do your own work and use your own words. Copying and pasting from on-line sources or soft-copies of other resources (hand-outs, e-books, etc.), or from other students' work, will result in serious loss of marks.

In all cases, your answers should be based on the information given.

Question 1.

A farmer named Prashant had a mixed farm. The maize was used mainly for feeding the pigs and chickens on the farm.

At the beginning of the financial year, Nov 2019, Prashant had \$30 000 in liabilities, and \$90 000 in assets.

For the financial year Nov 2019 to Oct 2020, the total variable costs and returns for the different enterprises were as follows:

	Total Variable Costs, \$	Returns, \$	Overhead	Total costs, \$	<u>Returns</u> TVC	Profit after overhead, \$
Maize	15,000	25,000	s	t		
pigs	12,000	15,000	u	v		
broilers	22,500	24,000				
layers	13,000	16,000			w.	x.
TOTAL			35,000			

- a.
- Give the values of **s, t, u, v, w, x**, in the table above. (12 marks)
 - Comment on the financial viability of the broiler enterprise, giving reasons for your answers. (4 marks)
 - Comment on the proportion of overhead costs to variable costs. (4 marks)
 - Discuss briefly his profit (after considering overhead costs) as a percentage of beginning-of-year equity. (4 marks)
 - Give two appropriate examples of SMART objectives for the next financial year. (6 marks)
- b. Prashant's farm is classified as General Agriculture. Explain how the finances of his farm will be affected if he opens a farm shop, and is then classified as Agro. (6 marks)
- c. Explain how using the principle of Economies of Scale might improve the profitability of the pigs. (6 marks)

- d. Identify the **most** profitable of the enterprises (on a percent basis), then suggest appropriate strategies to increase profit even more in that enterprise. (8 marks)
- e. Demonstrate your ability to use the Conversion method as discussed in class to answer the question below:
Prashant has a field of 4 Ha. He sowed maize to achieve a population of 45,000 plants per Ha. Each plant produced an average of 1.05 cobs, with grain weighing 235 g. How many empty bags (50 kg) does he need to store the harvest? (4 marks)
- f. For the maize enterprise, give 3 **specific** examples **each** of:
current assets
variable costs (6 marks)

Question 2.

- a. Catherine had a broiler project. Her record keeping showed the following:

Purchased 400 day-old chicks for \$.80 each.

Feed used: Broiler starter mash- 8 x 50 kg bags @\$31 each

Broiler finisher mash 25 bags x 50 kg bags @\$30 each

Medicines- \$3

Labour- Nathan- Two months @\$25 per month

Brighton (security) Two months @\$25 per month

Casual employees for slaughtering- \$50 total

Wood shavings- no charge but the transport cost \$25

Water and electricity- \$40

Plastic bags \$8

Sales- Live birds- 87 @\$5 each

Dining hall- 283 dressed birds, total of 410 kg of meat @\$2.70 per kg

Daily sales- 17 dressed birds, total of 27.2 kg of meat @\$2.90 per kg

Offals and heads- \$24 total

- i. Make a table that clearly summarizes the finances of the project, then comment on the profitability of this project. (16 marks)
- ii. Calculate the feed conversion of the birds and comment on it. (6 marks)
- iii. Calculate the mortality and comment on it. (4 marks)
- b. At the beginning of the project Catherine had total assets of \$2000, and total liabilities of \$500. Calculate her Return to Equity and discuss briefly whether it was good or not. (6 marks)

c. Discuss different sources of advice that Catherine could use to improve the profitability of her broiler project. Be as specific as possible. (6 marks)

d. Explain the principle of Equamarginal Returns. (4 marks)

e. Explain how Catherine could use principles of Marketing and Input Procurement to increase her profit margins. (12 marks)

f. A labour-day for regular workers is considered to be 8 hours.

Nathan worked 4 hours per day for 50 days.

Brighton worked 4 hours per day for 50 days.

Each casual worker slaughtered 50 broilers per day.

What was the total labour-days for this project? (2 marks)

g. One of the three main financial documents is the Cash flow statement. What are the other two and what do they tell you about net worth? (4 marks)

Question 3.

3. Kevin owns a broiler project named Kevin's Kuckoos. He has asked you to help him organize the following data from his farm into meaningful information.

	1/1/2019, values in \$	12/31/2019, values in \$
Total farm liabilities	2,000	1,800
Total farm assets, market value	10,000	15,000
Accounts payable Balances		
Trevor's Total Feed Supply	600	650
Blessing's Basic Supplies	300	320
Accounts receivable balances		
Brian's Braii City	140	180
Mauru's Meat-N-Eat	220	230
Inventory of purchased concentrate	210	50
Inventory of live chickens	1,100	950
Inventory of maize grown on the farm	250	600
Cash farm receipts		24,700
Cash farm expenses, including interest on debt		19,120
Building and equipment depreciation		400

Assume all other values are 0 or irrelevant, and that there is no inflation.

- a. Copy the table below and use it to construct a Profit/Loss Statement of Kevin's farm for 2019. (14 marks)

Cash Receipts		
Change in Inventory (livestock and crops)		
Change in Accounts Receivable		
Total Accrual Receipts (TAR)		
Cash Expenses		
Change in Accounts Payable		
Change in Inventory (cash expense items on hand)		
Depreciation		
Total Accrual Expenses (TAE)		
	TAR- TAE =	
	Net Farm Income =	

- b. Assume 10% return on beginning of year equity. *Discuss* his return on labour and management. (10 marks)
- c. For the last batch of broilers, Kevin's broiler mash cost \$35 for 50 kg. His feed conversion ratio ($\text{kg}_{\text{feed}}:\text{kg}_{\text{meat}}$) was 2.6 He sold the broilers to a butcher for \$2.90 per kg of meat. Discuss the profitability of the batch and how he might improve it. (8 points)

d. Kevin was offered one tonne of broiler mash on account for \$700/tonne, and he had to pay after three months.

The cash price for the same feed was \$650/tonne, but he would have to borrow money at 3% interest per month. Which is the better option for him- to buy on account, or to borrow money and pay cash? Support your answer. (4 marks)

e. Based on the information given, give two examples of SMART objectives Kevin could adopt for the next financial year, then discuss strategies that could he use to achieve them. (12 marks)

f. Kevin found broilers feed on sale and decided to buy nine months' supply. Explain the problems with this. (6 marks)

g. Kevin owns an 82-hp tractor. Diesel is \$1 per litre.

His tractor needs three hours to plough one Ha.

His neighbour, Pascal, has a plough, but no tractor. Pascal asked Kevin to use his tractor to plough

Pascal's field. They measured the field by stepping (pacing), and found the following measurements.

Both have a pace that is 0.72m/pace.

What is a fair price for Kevin to charge Pascal? Support your answer. (6 marks)

