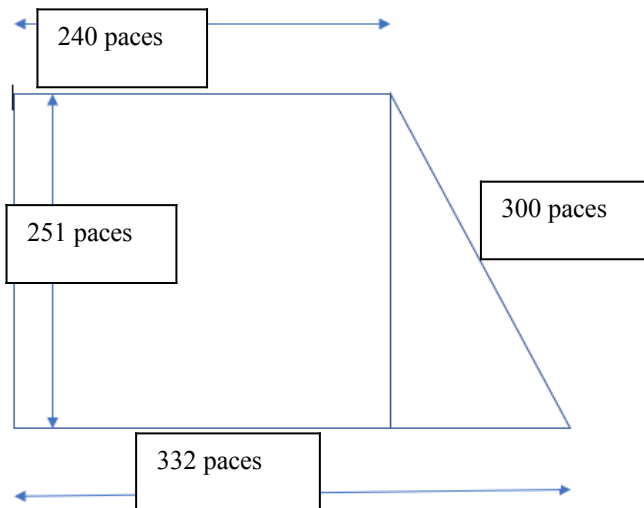


NAEC 401: Farm Management and Planning FINAL EXAM 2023 April

Answer ALL questions in Part I and ONE questions from Part II. If calculations are involved, show all work and indicate your answer clearly.

PART I.

- 1 a. Give three reasons why it is helpful for a farmer to have a map of her farm. (3 marks)
- b. Tendai measured the field below by pacing. He took 58 paces to walk 50m. What is the area of the field, in m^2 and *estimated* in hectares? (3 marks)



- c. Give three problems that result when a farmer buys agricultural inputs in quantities which are much more than what is needed at the time. (3 marks)
-
- 2 A farm has a farm manager, and four enterprises (dairy, beef, goats, broilers). All four enterprises have 5 workers each. There are 3 supervisors: one each for dairy and broilers, and one who does both beef and goats.
 - a. Draw a diagram illustrating an appropriate hierarchy of authority (organizational chart) for this farm. (3 marks)
 - b. Give two reasons why it is important for a farm manager to know employees' names. (2 marks)

- 3 Tavonga has a livestock farm and wishes to estimate the feed costs for his products. Answer the following questions using the following feed prices, feed conversion ratios, and dressing percentages.

PRODUCT	\$/50 kg bag	
Beef Pen Feeding Meal	14.00	
Layers mash	27.00	
Pig Grower/Finisher Meal (PGF)	24.00	
Mixture of concentrate:maize		
1:4 Beef Concentrate (1:4 BC)	22.00	1:4
Pig Grower/Finisher Concentrate (PGFC)	35.00	2:3
Maize	16.00	

Livestock class	Feed conversion ratio	Dressing percentage
Pigs- 10-12 kg	2.1	65
20-50 kg	2.7	70
50-110 kg	3.8	72
Beef feeder cattle	10	50

What is Tavonga's feed cost for producing one kg of meat, for the following? (4 marks)

Feed cost per kg of meat	Class of animal	Type of feed
a.	beef steer	pen feeding meal
b.	60 kg pig	PGFC + maize

c. Tavonga can sell his pork to a local butchery for \$2.60 per kg (dressed weight). Will it be profitable for him? Explain. (2 marks)

d. His layers flock was producing at 82% laying percentage. What was the feed cost per dozen eggs, assuming 120 g of feed per bird? (2 marks)

- 4 The table below lists a number of enterprises in the first column. In the second column are terms in farm management. Give a *specific example* of each term from the enterprise listed in the 1st column. (6 marks)

dairy	Non-current asset	a.
pigs	Current asset	b.
layers	Variable cost	c.
soyabeans	Fixed cost	d.
wheat	Variable cost	e.
maize	Current asset	f.

f. There are three main financial summary documents. Two are Cash Flow Statement and Balance sheet. What is the third? (1 mark)

g. What is the major advantage for a farmer to sell her products to a wholesaler instead of in her own farm stall? (1 mark)

5 Melania planted maize in her field of 8 hectares.

Before harvesting, she estimated the yield by taking a sample from a plot which was 18 m². She harvested 15.2 kg of maize grain from the plot.

- a. How many empty 50-kg bags does she need to buy to store her maize? (2 marks)
- b. Nyasha borrowed \$3 000 for inputs, at an interest rate of 1% per month, compounded monthly. She repaid the loan after 6 months. How much did she pay in *interest* for the loan? (2 marks)
- c. Give the approximate length of time, in *years*, that it will take money to double at the following interest rates:
 - i. 5% per *year*
 - ii. 14% per *year* (2 marks)

6 A farmer named Show had a mixed farm. The maize was used mainly for feeding the chickens on the farm.

At the beginning of the year Show had \$20 000 in liabilities, and \$170 000 in assets.

Overhead for individual enterprises was calculated based on proportion of total variable costs.

For the year 2018, 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	26,000	40,000				
Fish	35,000	38,000		w	x	y
broilers	7,000	11,000				
layers	24,000	36,000				z
TOTAL	92,000	125,000	15 000	107,000		

- a. Give the values of **w**, **x**, **y**, and **z** in the table above. (4 marks)
- b. Comment on the financial viability of the layers enterprise, giving reasons for your answers. (2 marks)
- c. Comment on whether the proportion of overhead costs to variable costs is acceptable. (1 mark)
- d. What was his net worth at the beginning of the year? (1 mark)
- e. Comment on his debt:asset ratio at the beginning of the year. (1 mark)

- 7 a. Fill in the missing steps in the decision-making process. (2 marks)
- i. Define the problem or decision to be made
 - ii.
 - iii. Compare the alternatives
 - iv. Identify the best alternative
 - v. Do it! Implement the decision
 - vi.
- b. When planning, objectives are supposed to be SMART. State the characteristics which the letter 'M' stands for, and give an example from a commercial broiler farm. (2 marks)
- c. There are four basic factors of production in agriculture. One is labour; another is capital. What are the other two? (2 marks)

PART II. Answer ONE question only from this section.

8 Emma had a broiler project. Her record keeping showed the following:

Purchased 700 day-old chicks for \$1.00 each.

Feed used: Broiler starter mash- 13 bags @\$33 each

Broiler finisher mash 31 bags @\$32 each

Medicines- \$40

Labour- Shakemore- Two months @\$50 per month

Casual employees for slaughtering- \$50 total

Lovemore (security) Two months @\$20 per month

Wood shavings- no charge but the transport cost \$17

Water and electricity- \$32

Plastic bags \$20

Sales- 672 dressed birds, total of 946 kg of meat @\$4.20 per kg

Offals and heads- \$48 total

- a. Make a table that clearly summarizes the finances of the project. (5 marks)
- b. Calculate the feed conversion of the birds and comment on it. (2 marks)
- c. Calculate the mortality and comment on it. (2 marks)

9 Write an essay about how to be a successful farm manager, including characteristics of a good farm manager, and sources of information that will help a farm manager in making decisions. (9 marks)

10 Ben owns a broilers project named Ben's Birds. He has asked you to help him organize the following data from his farm into meaningful information.

	1/1/2017, values in \$	12/31/2017, values in \$
Total farm liabilities	4,500	3,500
Total farm assets, market value	15,600	22,100
Accounts payable Balances		
National Foods	500	350
Mutare Farm Supplies	100	200
Accounts receivable balances		
TM Butchery	400	300
Kanyenze Shop	300	420
Inventory of broiler concentrate	130	60
Inventory of live chickens	1,200	720
Inventory of frozen chickens	180	780
Cash farm receipts		21,760
Cash farm expenses, including interest on debt		14,120
Building and equipment depreciation		260

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

- Copy the table below and use it to construct a Profit/Loss Statement of Ben's farm for the financial year. (6 marks)
- Assume 8% return on beginning of year equity. What was his return on labour and management? (3 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 =	