



**COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES**

**NAEC 401: FARM MANAGEMENT AND PLANNING**

**END OF SECOND SEMESTER FINAL EXAMINATIONS**

**APRIL 2023**

**LECTURER: MR L. KIES**

**DURATION: 3 HOURS**

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

**PART I.**

- 1 a. Explain briefly (as related to Farm Management) the term *Law of Diminishing Returns*. (1 mark)  
b. Write brief notes concerning problems that result when not enough inputs are purchased ahead of the time they are needed (3 marks)

- 2 Choose *one* enterprise from the following: Dairy or cabbage (13 marks)

Write the name of the enterprise you have chosen in your answer book.

Answer all of the questions below *using specific examples from the enterprise you have chosen*.

- a. Give two examples of non-current assets
- b. Give two examples of fixed costs.
- c. Explain the principle of economies of scale and give one example.
- d. Give two possible risks associated with producing the primary (main) product of the enterprise, and a strategy for managing each risk.
- e. Give three possible sources of advice or information on management of the enterprise.

- 3 a. Draw an hierarchy of authority (organizational structure or organogram) of a farm with the following employees:

Manager

Rabbit supervisor with 4 workers in his unit

Goat supervisor with 6 workers in her unit

Layers supervisor with 5 workers in her unit

(3 marks)

- b. Write short notes about the qualities of a good farm manager. (3 marks)

4 Answer the following questions using the following feed prices, feed conversion ratios, and dressing percentages.

PRODUCT	\$/50 kg bag, including transport	Mixture of concentrate:maize
Pig grower/finisher meal	22.00	
Pig Grower/Finisher Concentrate (PGFC)	36.00	2:3
Maize	18.00	
Layers mash	26.00	

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

a. What is the feed cost for producing one kg of meat, for the following?

	Class of animal	Type of feed
i.	30 kg pig	Pig grower finisher meal
ii.	60 kg pig	PGFC + maize

b. Anna has a flock of 2 200 hens that are 72 weeks old . They are producing an average of 1320 eggs per day. Each bird consumes an average of 120 g of feed per day.  
She can sell eggs for \$1.25 per dozen.  
What advice can you give her about whether to keep the birds? Justify your answer.  
(7 marks)

5 Karen planned to plant soyabeans in her new field of 12 hectares.

a. She bought a special herbicide with a recommended application rate of 5 ounce per acre. The herbicide comes in packets of 100 grams. How many packets of herbicide should she buy?  
(1 kg = 2.2 pounds; one pound = 16 ounce; 1 hectare = 2.5 acres) (2 marks)

b. She did not have money for the herbicide, so she approached a local supplier. The supplier offered to supply her, with two payment options: either \$20 *per packet*, cash  
or \$22 *per packet* after six months.

Her banker offered to lend her money (\$20 per packet), with interest at the rate of 2% per month, compounded monthly. Which is the better deal for her (that is, buy on account or borrow money and pay cash)? Explain. (3 marks)

c. Give the approximate length of time, in *years*, that it will take money to double at the following interest rates:  
i. 15% per *year*  
ii. 4% per *month* (2 marks)

6 Chichi runs a broilers enterprise named Chichi's Chicks. She has asked you to help her organize the following data from her farm into meaningful information.

	1/7/2017, values in \$	6/30/2018, values in \$
Total farm liabilities	8,000	18,000
Total farm assets, market value	45,000	70,000
Accounts payable Balances		
Feed Mix	800	400
Mutare Farm Supplies	1,200	1,500
Accounts receivable balances		
Munhumutapa Hotel	300	1900
Holiday Inn	1,000	800
Inventory of purchased feed	11,000	9,200
Live broilers	15,000	16,000
Frozen broilers	1,700	6,000
Heads	20	30
Offals	40	0
Cash farm receipts		137,000
Cash farm expenses, including interest on debt		125,670
Building and equipment depreciation		1,300

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 Chichi's farm. (5 marks)
- What was her change in net worth? (2 marks)
- Calculate her debt/asset ratio at the *end* of the year, and comment on it. (2 marks)

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

7 a. What does the Income Statement tell you about Net Worth?

b. What does the Balance Sheet tell you about Net Worth?

(2 marks)

8 Give the missing steps in the decision-making process, with a *brief* explanation of each of the missing steps. (3 marks)

- i. Define the problem or decision to be made
- ii.
- iii.
- iv.
- v. Do it!! Carry out the decision
- vi. Evaluate the results of the decision

**PART II. Answer ONE question only from the ones below.**

9 A farmer named Tendai had a mixed farm. For the year 2017, his records showed the total variable costs and returns for the different enterprises as follows:

	Total Variable Costs, \$	Returns, \$	Overhead , \$	Returns/TVC
Pigs	45,000	53,000		
Maize	45,000	72,000		
Fish	2,000	6,000		
Broilers	72,000	93,000		
Total			41,000	

- a. Copy and complete the table above. Assign overhead costs based on the percentage of total variable costs. (4 marks)
- b. Comment on the financial viability of the pigs enterprise. (2 marks)
- c. Comment on the overhead of the farm as a whole. (2 marks)
- d. How could Tendai reduce the costs designated as overhead? (1 marks)

10 Mr. Mutasa has 150 Ha of soyabeans. He expects yields of 3.1 tonnes/Ha.

Soyabeans are selling for \$680 per tonne.

- a. A new combine harvester would cost \$250,000. If he bought one and sold it after 6 years for 10% of the original cost, what would be the interest on investment cost per year? (2 marks)
- b. His other options for harvesting are:
  - Hire a combine harvester.The combine charge will be \$230 per Ha, plus fuel.

Expected fuel usage is 20 litres/Ha at a cost of \$3.25 per litre.  
Harvest losses are expected to be 10%.

- Hire seasonal workers.  
Each worker will be paid \$10.00 per 50 kg bag of soyabeans harvested and cleaned.  
Harvest losses will be 3%.

Which is the better alternative (between hiring a combine and harvesting using seasonal workers)?  
Explain, giving other factors which must be taken into account. Show all relevant calculations.  
(7 marks)

11 MaiHuku had a broiler project. Her record keeping showed the following:

*Purchased 1500 day-old chicks for \$1.10 each.*  
*Feed used: Broiler starter mash- 30 bags @\$28 per bag*  
*Broiler finisher mash 80 bags @\$27 per bag*  
*Medicines- Vaccines- \$80*  
*Labour- Joel- Two months @\$75 per month*  
*Brighton (security) Two months @\$50 per month*  
*Casual employees for slaughtering- \$125*  
*Wood shavings- no charge but the transport cost \$30*  
*Water and electricity- \$35*  
*Plastic bags \$40*

*Sales- 1443 dressed birds, total of 2093 kg of meat @\$4.00 per kg*  
*Offals and heads- \$108 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)

**End of Examination Paper**