



NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES
SCHOOL OF AGRICULTURE AND NATURAL RESOURCES SCIENCES
DEPARTMENT OF AGRICULTURAL SCIENCES AND AGRIBUSINESS

QUALIFICATION: BACHELOR OF SCIENCE IN AGRICULTURE / HORTICULTURE and REGIONAL AND RURAL DEVELOPMENT	
QUALIFICATION CODE: 07BAGA/07BHOR/07BRAR	LEVEL: 7
COURSE CODE: AEM520S	COURSE NAME: AGRICULTURAL ECONOMICS
DATE: NOVEMBER 2024	PAPER: 1
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY QUESTION PAPER	
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INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number your answers clearly.

PERMISSIBLE MATERIALS

1. Examination Question paper
2. Examination Answer booklet
3. Calculator

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

QUESTION 1**[22 MARKS]**

- 1.1** Agriculture is the backbone of many national economies, particularly in Africa. Discuss the importance of the agricultural sector in the Namibian economy, providing at least four key points. **[8]**
- 1.2** When markets fail to achieve efficiency, government intervention can improve societal welfare by promoting fairness (equity). Discuss two policies currently implemented by the Namibian government to ensure a fair distribution of economic resources to all citizens, regardless of their background or status. **[4]**
- 1.3** "Production Possibilities Frontier is an economic model used to explain the principle of opportunity cost". Explain the meaning of the following terms within the context of the PPF model. **[6]**
- (i)** Production Efficiency
 - (ii)** Allocative efficiency
 - (iii)** Infeasible production regions
- 1.4** Explain what happens to the PPF when the economy experiences economic growth. **[2]**
- 1.5** Explain why consumers are faced with opportunity costs when buying their goods. **[2]**
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- | | |
|--------------|-------------|
| Total | [22] |
|--------------|-------------|
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QUESTION 2**[19 MARKS]**

2.1 Consider the following functions that describe the market for oranges in Namibia:

$$P = 15 + 0.3Q_s$$

$$P = 70 - 2Q_d$$

Where P is the price (N\$ per kg), Q_s is the quantity of oranges supplied (in thousand kilograms), and Q_d is the quantity of Oranges demanded (in thousand kilograms).

- 2.1.1 Calculate the choke price and minimum selling price. [2]
- 2.1.2 Calculate the quantity supplied when the selling price is N\$18 per kg. [2]
- 2.1.3 Determine the equilibrium price and equilibrium quantity. [4]
- 2.1.4 Draw the market for oranges, illustrating the demand curve, supply curve, minimum selling price, choke price, equilibrium quantity, and equilibrium price [5]
- 2.1.5 Suppose the government introduces a price floor for oranges of N\$30 per kg.
 - (i) Determine if there will be a surplus or shortage in the market at this price. [2]
 - (ii) Calculate the size of the surplus or shortage in thousand kilograms. [2]
 - (iii) Illustrate the price floor on the graph from Question 2.1.4. [2]

Total**[19]**

QUESTION 3**[20MARKS]****3.1 Calculate the cross-price elasticity of demand for Irish potatoes given the following information:**

The price of sweet potatoes increased from N\$9.00 to N\$10.00 per kg.

When the price of sweet potatoes was N\$9.00 per kg, the quantity demanded of Irish potatoes was 150 kg per week.

When the price of sweet potatoes increased to N\$10.00 per kg, the quantity demanded of Irish potatoes increased to 190 kg per week.

- (i) Calculate the cross elasticity of demand for Irish potatoes. [3]
- (ii) Interpret the cross elasticity of demand for Irish potatoes. [2]
- (iii) Given the answer of cross elasticity, are Irish potatoes and sweet potatoes substitute or complementary goods? Motivate your answer. [2]

3.2 A farmer who specializes in two cash crops, groundnuts and cowpeas, is looking to hire a suitable candidate from NUST. To evaluate the candidates, she presented the following scenario:**Groundnuts:**

Initial price: N\$90 per ton

Proposed price: N\$100 per ton

Projected demand decrease: from 1,500 tons to 1,100 tons

Cowpeas:

Initial price: N\$120 per ton

New price: N\$125 per ton

Demand change: from 1,240 tons to 1,226 tons

Using this information,

- (i) Calculate the price elasticity for both groundnuts and cowpeas? [5]
- (ii) What type of elasticity of demand is groundnut and cowpeas? [2]
- (iii) If the farmer want to select one of the crop for increasing her revenue which crop are you recommending her to choose for her to make more profit? [2]
- (iv) By calculation, prove why you have chosen that cash crop in (iii)? [4]

Total	[20]
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QUESTION 4**[20 MARKS]**

4.1 Using the provided data, copy and complete the following table by calculating the Fixed, Variable, Total, and Marginal Cost.

Note: The cost of land is N\$40 per hectare, and the cost of labor is N\$200 per worker.

PRODUCTION INFORMATION			PRODUCTION COST INFORMATION			
Inputs		Output	Fixed Cost (FC)	Variable Cost (VC)	Total Cost (TC)	Marginal Cost (MC)
Land (Ha)	Labour (workers)	Wheat (kg)	(N\$)	(N\$)	(N\$)	(N\$)
5	0	0				
5	1	19				
5	2	36				
5	3	51				
5	4	64				
5	5	75				
5	6	84				
5	7	91				
5	8	96				

Each correctly completed column carries 5 marks, total = [20 marks].

Total	[20]
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QUESTION 5**[19 MARKS]**

5.1 "Money is any good widely accepted as payment for goods and services, whether in paper or coins." Explain the functions of money in the Namibian economy. **[4]**

5.2 State three key advantages of conducting National Income Accounting for any national economy. **[3]**

5.3 Discuss three approaches used in measuring Gross Domestic Product (GDP). **[6]**

5.4 Identify and explain the key determinants of loan interest rates. **[6]**

Total**[19]**

END OF QUESTION PAPER