NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OFCOMMERCE, HUMAN SCIENCE AND EDUCATION

DEPARTMENT OF ECONOMICS, ACCOUNTING AND FINANCE

QUALIFICATION: BACHELOR OF ECONOMICS HONOURS DEGREE	
QUALIFICATION CODE: 08BECO	LEVEL: 8
COURSE CODE: AMI810S	COURSE NAME: ADVANCED MICROECONOMICS
SESSION: JUNE 2023	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	MR. PINEHAS NANGULA
MODERATOR:	Dr Ernest Ngeh Tingum (UNAM)

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS
1. Scientific calculator
2. Pen and Pencil
3. Ruler

THIS QUESTION PAPER CONSISTS OF _4_ PAGES (Including this front page)

QUESTION ONE [25 MARKS]

Consumers derived utility from consuming good x and good y. Utility function is $U(X, Y) = X^{\frac{3}{4}}Y^{\frac{1}{4}}$, good y is a composite good with price (Py = N$1), the price of good x is (Px =N$5.00) and consumer income is (I = N$100). Government would like to increase the consumption of good x with 200 per cent. Government can achieve this objective by either giving cash subsidy or a voucher that can only be used in the purchase of good x. Government can only spend N$200.00.

a) Use a well labelled graph to represent the above information. [5 marks]

b) Calculate optimal combination of good x and good y associated with each option. Which option will you recommend and why? [10 marks]

c) If government has only N$60.00 to spend to increase the consumption of good x to 24 from the initial level, which option will you recommend? [10 marks]

QUESTION TWO [10 MARKS]

a) Construct two different economics models. Each model must at least have three exogenous variables and one endogenous variable. Use your knowledge of economic theories to state expected sign between exogenous variables and endogenous variables in your models. [4 marks]

b) Consider the market for beans that is initially in equilibrium with a market price of N$140.00 per kg and a market quantity of 100 000kg. Beans are an inferior good. The elasticity of demand for bean is perfectly inelastic and the elasticity of supply is relatively elastic. Suppose that people's incomes rise, and the production cost of beans increases. Draw graphs illustrating the initial equilibrium and the new equilibrium after the described changes. Provide a verbal description of the outcome in this market due to these changes. [6 marks]

QUESTION THREE [20 MARKS]

Let us analyse Namibia's beef market. The current total supply of beef is 1500kg per day at a current market price is N$115.00 per kg. The beef market is characterised by a unitary elasticity of demand and a 0.4 elasticity of supply. Currently, a new player is planning to enter the beef market with a daily production of 150kg. Calculate the percentage change in market price and percentage change in total supply of beef which is associated with the new player.

QUESTION THREE [25 MARKS]

Liina is deciding whether to give a loan to Johanna who is very poor and who has a bad credit history. Simultaneous to Liina making this decision, Johanna must decide whether or not to buy gifts for her boyfriend. If she buys gifts, she will be unable to repay the loan. If she does not buy gifts, she will repay the loan. If Liina refuses to give Johanna a loan, then Johanna will have to go to a loan shark.

If Liina refuses to give a loan to Johanna and Johanna buys gifts then both Liina and Johanna get 0. If Liina refuses to give a loan to Johanna and Johanna does not buy gifts then Liina gets 0 and Johanna gets -1. If Liina gives a loan to Johanna and Johanna buys gifts then Liina gets -2 and Johanna gets 7. If Liina makes a loan to Johanna and does not buy gifts, then Liina gets a payoff of 3 and Johanna gets a payoff of 5.

a) Identify players in this game [4 marks]

b) What are their strategies? [8 marks]

c) Construct the matrix with their payoff. [8 marks]

d) Does the game have a dominant strategy and nash equilibrium? [5 marks]

QUESTION FOUR [20 MARKS]

A bicycle manufacturing company is considering how to allocate a N$30 million advertising budget between two types of tournaments: Namibia premier league (NPL) football game and Namibian newspaper game. The following table shows the new bicycle that are sold when a given amount of money is spent on advertising during an NPL football game and a Namibian newspaper game. Let P be the amount of money devoted to advertising on NPL football games, T the amount of money spent on advertising on Namibian newspaper game, and $C(P,T)$ the number of new bicycle sold.

Total amount spent (Millions)	New sales from NPL football game	New sales from Namibian newspaper game	Total Sales
N$0.00	0	0	
N$6.00	4	15	

N$12.00	11	21	
N$18.00	16	27	
N$24.00	26	31	
N$30.00	31	34	

i)   Write down the objective function for this problem?   [1 mark]

ii)   Sate the constraint?.   [1 mark]

iii) Write a statement of the constrained optimization problem.   [2 marks]

iv) Calculate total sales associated with each spending on NPL football games and Namibian newspaper game.   [6 marks]

v)   Considering the information in the table, how should the manufacturer allocate its advertising budget?   [4 marks]

b)   The demand and supply functions for beef ; $P = 100 - 0.5Q$ and $P = 90 + 0.5Q^2$ respectively. Using integral calculus, calculate consumer's and producer's surplus.   6 marks]

All the best