NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF MANAGEMENT SCIENCES

DEPARTMENT OF ACCOUNTING, ECONOMICS AND FINANCE

QUALIFICATION: BACHELOR OF TECHNOLOGY : ECONOMICS	
QUALIFICATION CODE: 07BECO	**LEVEL: 7**
COURSE CODE: MEN311S	**COURSE NAME:** MANAGERIAL ECONOMICS
SESSION: JUNE 2019	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Mr. Roberth Disho Kaveto
MODERATOR:	**Mr Eden Shipanga**

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

PERMISSIBLE MATERIALS

1. Pens/pencils
2. calculator
3. Ruler

THIS QUESTION PAPER CONSISTS OF 5 PAGES (including this front page)

Question 1 (25 MARKS)

1. Young and Rubicon did a study to estimate the effects of advertising expenditures on the sales of bread and found that the relationships between advertising expenditures and sales in the two districts were:

$S_1 = 10 + 5A_1 - 1.5^2_{A2}$

$S_2 = 12 + 4A_2 - 0.5A_2^2$

Where, S_1 is the sales of Bread (in Millions of dollars per year) in the first district, S_2 is the sales in the second district and A_1 is the advertising expenditure on Bread in the first district and A_2 is the advertising expenditure in the second district.

(A) Determine the amount of additional sales that an extra dollar of advertising would generate in each district. (4)

(B) Suppose that \$0.5 million was being spent on advertising in the first district and \$ 1 million in the second district, calculate the extra dollar generated in this transactions. (6)

(C) On the basis of your findings, what is your recommendations concerning the regional allocation of sales and advertising? (5)

2. Given the demand equation:

Q = 700 – 2P + 0.02Y
Where Q is quantity demanded, P is market price = \$25 and Y is income = \$ 5000,

(A) Define and calculate the price elasticity of demand (**5**)

(B) Define and calculate the income elasticity of demand (5)

Question2 (25 MARKS)

1. A study estimated that, the average cost per patient –day of a nursing home is:

$Y = A - 0.16x + 0.00137x^2$

Where, X is the nursing home number of patient-days per year (in thousand) and A is a number that depend s on the region in which the nursing home is located.

(A) On the basis of the results of this study, how big must a nursing home be (in terms of patient-days) to minimise the average cost per patient-day? **(5)**

(B) Show that your result minimizes, rather than maximizes, the average cost per patient-day. **(5)**

(C) Is the number of patient-days a good measure of a nursing homes output? Why or why not? **(2)**

2. Suppose that, the demand for newspaper is estimated as follow:
   $\boldsymbol{Q_1 = 17.3 - 0.0092P + 0.0067Y}$
   Where Q_1 is quantity demanded in kilogram per ton, P is the price of newspaper in dollars and Y in the income per capital in dollars.

   A) If there are 1 million people in the market, and per capital income equals $10 000.00, what is the demand curve for newspapers? (**5**)

   B) Under these circumstances, how many newspapers are sold if P=$400 and Y=$ 10,000? (**3**)

   C) List any 5 characteristics of a monopolistic firm (5)

Question 3 (25 MARKS)

1. Suppose that a company produces two products and that it's Total Cost equals:

$$\boldsymbol{TC = 4Q_1^2 + 5Q_2^2 - Q_1Q_2}$$

Where Q_1 equals its output per hour of the first product and Q_2 equals its output per hour of the second product. Because of the commitments to customers, the number produced of both products combined must not be less than 30 per hour.

(A) What output levels of the two products minimize the firm's costs, given that, the output of the first product plus the output of the second product equals 30 per hour? (10)

(B) Find the value of Q_2 that minimizes Total Cost. (5)

(C) Find the value of Q_1 that minimizes Total Cost (Hint: given that, the constraint is $Q_1 + Q_2 = 30$. (3)

(D) Describe your findings. (2)

(E) Using your answers above, what is the actual Total Cost given $TC = 4Q_1^2 + 5Q_2^2 - Q_1Q_2$. (5)

Question 4 (25 MARKS)

1. For a perfectly competitive firm, long- run average cost is:

$LAC = 150 - 10Q + 0.25Q^2$, where Q denotes the firms output

(A) Determine the firm's long-run profit maximizing output and price. **(7)**

2. A monopolist faces the price equation:

P = 2000 – 0.5Q and Total Cost: $TC = 50,000 + 100Q + 0.4Q^2$

(A) Determine the price and output that maximize total Revenue. **(7)**

(B) Determine the amount of profit at the revenue maximizing output level.**(5)**

3. The kinked demand curve in an Oligopolistic market is defined by the equation:

P = 200 – 2Q and P = 400 – 6Q

A) Derive the equation for the marginal revenue curves. **(6)**

THE END

100 MARKS