



"Investing in Africa's Future"

FACULTY OF MANAGEMENT AND ADMINISTRATION

COURSE CODE AND TITLE: MEC 101-Economics principles 1

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER 2016

LECTURER: Mr L. NGENDAKUMANA

DURATION: 3 HOURS

INSTRUCTIONS

Answer both questions in section A and any three questions in section B

Total possible mark is 100

Start **each** question on a new page in your answer booklet.

The marks allocated to **each** question are shown at the end of the section.

Show all your workings.

Credit will be awarded for logical, systematic and neat presentations.

SECTION A

Question 1

Suppose that the country of Tiny Island has an economy with only one resource, labor. Labor can be used to produce only two commodities, **X**, a necessity good and **Y**, a luxury good (music and merriment). Suppose that the labor force consists of 10 workers. One laborer can produce either 5 units of necessity per month (hunting and gathering) or 10 units of luxury per month.

- On a graph, draw the economy's production possibility frontier (ppf). Where does the ppf intersect the **A** axis? Where does it intersect the **B** axis? What meaning do these points have? **(3 marks)**
- Suppose the economy ends up producing at point C inside the ppf. Give at least two reasons why this would occur. What could be done to move the economy to a point on the ppf? **(3 marks)**
- Suppose you manage to lift your economy to a point on its ppf. What point would you choose? How might your small society decide the point at which it wanted to be? **(3 marks)**
- Define opportunity cost. If the economy decided to use all its resources to produce necessities, what would be the total opportunity cost in units to this economy? **(4marks)**
- Once you have chosen a point on the ppf, you will still need to decide how your society's output will be divided up. If you had a command economy, how would you decide? What would happen if you left product distribution to the free market? **(4 marks)**
- How are production possibilities influenced by technology and resource availability? **(3 marks)**

Question 2

(a) Define the following terms;

- | | |
|---|-----------------|
| i. Complementary goods | (1 mark) |
| ii. Perfectly competitive market | (1 mark) |
| iii. Price discrimination | (1 mark) |
| iv. Law of Diminishing marginal returns | (1 mark) |
| v. Consumer surplus | (1 mark) |
| vi. Total and marginal utility | (1 mark) |
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- The price of a 500L pack of Lacto milk rises from \$1 to \$1.25. As a result, the weekly quantity demanded falls from 10000 to 9000 packs. Calculate the price elasticity of demand for milk. Interpret your result **(3 marks)**
 - How can monopolist earn abnormal profits in the long run? Outline the various types of entry barriers that can deter competitors entering an industry even when the existing player is earning abnormal profits? How do other players eventually circumvent these barriers? **(6 marks)**
 - Give any two determinants of price elasticity of demand. **(2 marks)**
 - The income elasticity of demand for furniture is 3. A recession reduces consumer incomes by 10%. What will happen to furniture sales? Explain why the demand for soap will be much less responsive to a reduction in income than the demand for furniture if the income elasticity of demand for soap is only 0.3 **(4 marks)**
 - Suppose the market for coffee is currently in equilibrium at a price of \$3 per kg. An early frost in the coffee growing nations decreases the supply of coffee. With the aid of a diagram, use the demand and supply analysis to show the impact of the freeze on market equilibrium price and quantity of coffee. **(3 marks)**

SECTION B

Question 3

The following table gives demand and supply schedules for eggs in Mutare.

Dozens of Eggs per Week		
Price (dollars per dozen)	Quantity Demanded	Quantity Supplied
\$2.00	1000	9000
1.75	2000	8000
1.50	3000	7000
1.25	4000	6000
1.00	5000	5000
0.75	6000	4000
0.50	7000	3000
0.25	8000	2000

- Draw a graph showing the demand and supply curve for eggs clearly indicating the equilibrium price and quantity. What is the market clearing price for eggs? (4 marks)
- How much will be the excess supply if suppliers set the price at \$1.50? (2 marks)
- What will happen if the government set the price limit for eggs at \$0.50 per dozen? (3 marks)
- A report is published warning that eggs have high levels of cholesterol that increases the chance of a heart failure. Illustrate graphically and explain what will happen in this market? (3 marks)
- What will happen if there is an increase in the price of chicken feed? (2 marks)
- What may cause a change in quantity demanded for eggs? What can cause a change in the demand for eggs? (3 marks)
- Calculate the price elasticity of demand when the price increases from \$1.25 to \$1.50 (3 marks)

Question 4

- Given the following table calculate the elasticity and the total revenue at each price and indicate whether demand is elastic or not. (8 marks)

Total Quantity demanded(Q)	Price Per Unit (P)	Elasticity Coefficient (E_d)	Total Revenue (TR)	Elastic/ Inelastic
1	8	?	?	?
2	7	?	?	?
3	6	?	?	?
4	5	?	?	?
5	4	?	?	?
6	3	?	?	?
7	2	?	?	?
8	1	?	?	?

- b. The income elasticities of demand for movies, dental services and clothing have been estimated to be +3.4, +1.0 and +0.5, respectively. Interpret these elasticity levels. What does it mean if the income elasticity coefficient is negative? **(3 marks)**
- c. Suppose the cross elasticity of demand for products A and B is +3.6 and for products C and D it is -5.4. What can you conclude about how products A and B and products C and D are related? **(3 marks)**
- d. The cross elasticity of demand for bacon with respect to the price of eggs is -2. What does this tell you about the way consumers perceive the relationship between bacon and eggs? **(3 marks)**
- e. Why would the knowledge of elasticity be important to a monopolist? **(3 marks)**

Question 5

You are given the following table with information about a firm in a competitive market

Output	Price	Total Cost
0	\$10	\$30
1	10	40
2	10	45
3	10	48
4	10	55
5	10	65
6	10	80
7	10	100
8	10	140
9	10	220
10	10	340

- a. What would be the profit maximizing output for this firm? What would be the new equilibrium price if in response to an increase in demand, the price of the good increased to \$15? **(4 marks)**
- b. List the characteristics of under which a perfectly competitive market can exist? **(3 marks)**
- c. How do you derive the competitive firm's short run supply curve? **(3 marks)**
- d. Demonstrate graphically the profit maximizing positions of a perfectly competitive firm and a monopolist. How do they differ? **(5 marks)**
- e. A profit maximizing firm has an average variable cost of \$4 but gets a price of \$3 for each unit it sells. What would you advice the firm to do? How would your answer differ if the price was \$3.50? **(4 marks)**

Question 6

Consider the market for pies. Suppose that the market demand for is given by the equation $Q_d = 300 - 20P$ and the market supply for pies is given by the equation $Q_s = 20P + 100$ where Q_d is quantity demanded, Q_s is quantity supplied and P is the price per pies.

- i. Graph the supply and demand for pies using \$5 through to \$15 as the values for P . **(4 marks)**
- ii. In equilibrium, how many pies will be sold and at what price? **(3 marks)**
- iii. What would happen if suppliers set the price of pies at \$15? Explain the market adjustment process. **(3 marks)**
- iv. Outline and explain the main determinants of demand for any product **(7 marks)**
- v. Distinguish between the effects of a shift factor of demand on the demand curve from the effect of a change in price on the demand curve. **(3 marks)**

Question 7

The following table shows the marginal utility of Celiwe's consumption of 3 goods: A, B and C

Units of Consumption	MU of A	MU of B	MU of C
1	20	25	45
2	18	20	30
3	16	15	24
4	14	10	18
5	12	8	15
6	10	6	12

- What is the general utility maximizing principle for the consumer? **(3 marks)**
- Good A costs \$2 per unit, good B costs \$1 and good C costs \$3. How many units of each should the consumer with \$12 buy to maximize his utility? **(6 marks)**
- How will the answer change if the price of B rises to \$2 **(3 marks)**
- How about if the price of C is \$0.50 and the other prices are as in a above? **(3 marks)**
- Explain how the marginal utility of an item is related to its total utility. What is the law of diminishing marginal utility? **(5 marks)**

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