



**ZCAS University**

**SEC1172 INTRODUCTION TO ECONOMICS**

**TEST**

**17 OCTOBER 2023**

**08:30 – 11:30 HRS**

**TIME ALLOWED: THREE HOURS (plus 5 minutes to read through the paper)**

**INSTRUCTIONS:**

1. Section A: this question is compulsory and must be attempted.
2. Sections B: Answer Three (3) questions from this section.
3. This question paper carries a total of 100 marks.
4. Candidates must not turn this page until the invigilator tells them to do so.

## SECTION A

### QUESTION ONE

A firm, ABC, operates in the agriculture sector and faces capital costs of K10000 while hiring workers at a wage of K1000. The following table represents how the total output (Q) varies as the firm hires labor.

Workers	Q	$\Delta Q$ (A)	TC (B)	$\Delta TC$ (C)	VC (D)	AVC (F)	MC (G)
0	0						
1	380						
2	450						
3	510						
4	560						
5	600						
6	630						
7	628						
8	620						

- a) Compute and fill in the missing values for the marginal product of Labor (A), total cost (B), variable cost (D), average fixed cost (E), average variable cost (F), and marginal cost (G). [35 Marks]
- b) Discuss the level of employment that corresponds to the three stages of employment. [5 Marks]

[TOTAL 40 MARKS]

## SECTION B

### QUESTION TWO

The government, through the food reserve agency moves in the agricultural market to buy maize and other food crops from farmers.

- a) Explain the purpose government intervenes in the agricultural market and the implications on welfare. [6 Marks]
- b) Consider a perfectly competitive market for wheat. The market price is \$14 per bushel, and the total cost function for a wheat farmer is given by  $TC = 3Q^2 - 10Q + 50$ , where Q is the quantity of wheat produced.
  - i. Calculate the farmer's marginal cost (MC) function. [5 Marks]
  - ii. Determine the profit-maximizing quantity of wheat the farmer should produce in the short run. [5 Marks]
  - iii. Calculate the farmer's short-run economic profit or loss. [4 Marks]

[TOTAL 20 MARKS]

### QUESTION THREE

- a) The cross-price elasticity of demand between two goods X and Y is 0.5. If the price of good Y increases by 10%, calculate the expected percentage change in the quantity demanded of good X. [7 Marks]
- b) Suppose a company sells a product with the demand function  $Q_d = 100 - 2P$ , where  $Q_d$  is the quantity demanded and  $P$  is the price of the product.
- i. Calculate the quantities demanded at a price of \$30. [3 Marks]
- ii. Calculate the point price elasticity of demand when the price is \$30. [7 Marks]
- iii. Is demand elastic? Justify your answer. [3 Marks]

[TOTAL 20 MARKS]

### QUESTION FOUR

A company produces and sells 500 units of a product at a price of \$16 each. The variable cost is \$6,000, and the total fixed cost is \$3,000.

- a) Calculate the company's total cost, total revenue, and profit. [8Marks]
- b) Calculate the average fixed cost, average variable cost and average total cost. [6 Marks]
- c) Explain what the company do to minimize losses. Provide justification for your answer. [6 Marks]

[TOTAL 20 MARKS]

### QUESTION FIVE

- a) The market for oranges in utopia is characterized by the following information. The quantity demanded of oranges is given by  $Q_x^d = 40 - 2p_x$  and the quantity supplied of oranges by  $Q_x^s = -2 + 0.5p_x$  respectively.
- i. Calculate the maximum price residents of utopia are prepared to pay to have an orange. [4 Marks]
- ii. How much are the producers of oranges prepared to accept as lowest price to supply the citrus fruits. [4 Marks]
- iii. Determine the equilibrium price and quantities for oranges in utopia. [6 Marks]
- iv. Compute the overall welfare gains the people of utopia enjoy from the oranges market. [6 Marks]

[TOTAL 20 MARKS]

END OF EXAMINATION