UNIVERSITY OF ESWATINI

FINAL EXAMINATION PAPER

PROGRAMME: BSc. in Agricultural Economics and Agribusiness Management Year 4

COURSE CODE: AEM407

TITLE OF PAPER: PRODUCTION ECONOMICS

TIME ALLOWED: TWO (2): HOURS

INSTRUCTION: 1. ANSWER ALL FOUR QUESTIONS
2. EACH QUESTION CARRIES 25 POINTS

DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR

Question 1 (25 MARKS)

a) As a society our resources are insufficient to produce all the goods and services we might desire. Discuss briefly the scarce resources in the viewpoint of society.   **10 MARKS**

b) Where should a rational firm produce? In your answer discuss why the rational firm should produce or not produce in stages I, II and III.   **15 MARKS**

Question 2 (25 MARKS)

a) Fill in the missing cells. Assume the firm operates in a perfectly competitive environment in both the input and output markets.   **13 MARKS**

L = Labor   Q = Quantity of output   P(L) = Labor price

L	Q	P(L)	TFC	TVC	TC	MC	ATC	AVC	AFC
2	40	5	110						
	65					.4			
	80							.375	
	90				150				

b) Consider the production function: $Y = 4X^2$. What is the:

   i.   Inverse production function   **2 MARKS**

   ii.   APP   **2 MARKS**

   iii.   MPP   **2 MARKS**

   iv.   TVC   **2 MARKS**

   v.   AVC   **2 MARKS**

   vi.   MC   **2 MARKS**

Question 3 (25 MARKS)

Suppose you have 100 workers (variable input, X) to employ in order to produce product N and product M. The production function for N is given by $N = 10 + 2X - 0.01X^2$ and the production function for M is given by $M = 20 + 12X - 0.2X^2$. The market price for N is E20 per kg while the price for M is E5 per kg.

How will you allocate the 100 workers to produce the two products for the market and at the same time be able to maximize profit from each of the two products? **25 MARKS**

Question 4 (25 MARKS)

Suppose the production function is given by $Y = X_1^{1/3}X_2^{1/3}$; where Y is output and X_1 and X_2 are inputs. If the price of X_1 is E3, price of X_2 is E3 and output price is E18, what is the marginal product of each of the two inputs at the least cost input combination? **25 MARKS**