

**UNIVERSITY OF SWAZILAND  
FACULTY OF SOCIAL SCIENCE  
DEPARTMENT OF ECONOMICS  
MAIN EXAMINATION  
DECEMBER 2016**

**TITLE OF PAPER: MICROECONOMICS**

**COURSE CODE: IDE-ECON201**

**TIME ALLOWED: THREE (3) HOURS**

**INSTRUCTION: ANSWER QUESTION 1 (ONE) AND ANY OTHER TWO  
QUESTIONS**

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BY THE CHIEF INVIGILATOR.**

## Question 1 Compulsory (Total 40 marks)

- Discern between a Marshallian and a compensated demand curve. (5 marks)
- From the following demand curve, calculate the consumer surplus;  $P = 45 - 2Q - Q^2$  and  $P^* = 10$  and  $Q^* = 5$ . (5 marks)
- Given that  $P = Q + Q^2$  at  $P^* = 30$ , calculate the producer surplus. (5 marks)
- Given that  $U = 3X^{1/4}4Y^{1/4}$  and  $M = P_xX + P_yY$ , derive the demand curves stated in part a) above. (10 marks)
- Sketch the linear demand curve given by the following function:  $Q = \alpha - \beta P$ . Show the price and quantity intercepts. Indicate the ranges where demand is elastic and inelastic. (10 marks)
- Assuming a monopoly where  $P = 339 - Q$  and  $MC = 147$  find the profit maximising output and market price. (5 marks)

## ANSWER ANY TWO QUESTIONS FROM THE FOLLOWING:

### Question 2

- Using graphs, explain the three stages of production. (15 marks)
- Outline the two main conditions for profit maximisation, concerning the sizes of MR and MC. (5 marks)
- If  $Q = 150 - 5P$ , find the price elasticity of demand when price is E10. Interpret this elasticity and indicate if it elastic or inelastic. Be sure to state the general formula for price elasticity of demand. (10 marks)

### Question 3

- Using the information given below, show that maximising output for a given cost or minimising cost for a given output level yields the same equilibrium result for the producer:  $Q = f(L, K)$  and  $C = wL + cK$ , (20 marks)
- Use graphs to briefly explain the long run equilibrium positions for firms under monopolistic and perfect competition. (10 marks)

### Question 4

- Assuming that you have two firms 1 and 2 in a duopoly and  $Q = 339 - P$  and constant marginal cost is 147. Find firms 1 and 2's reaction functions. (10 marks)
- Find the Cournot equilibrium and the market price. (10 marks)
- Using the information in part a) above and now assuming a competitive market find the equilibrium price and quantity. Indicate the output for each firm. (10 marks)